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AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

Copyright 1937, by C. P. Dadant. Published monthly at Hamilton, Illinois. Entered as Second-Class Matter at the Postoffice at Hamilton, Illinois. C. P. Dadant, editor; Frank C. Pellett, field editor; G. H. Cale, associate editor; Maurice Dadant, business manager. In United States, Canada and Mexico, $1.00 a year; 2 years $1.50; 3 years $2.00. Foreign, $1.25 a year; 2 years $2.00; 3 years $2.75. Subscription stopped at expiration date printed on wrapper.

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NOTICE!

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Send for price sheet on supplies.

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BUNKIE, LOUISIANA

ADVERTISING PAGES REMOVED

AMERICAN BEE JOURNAL

Vol. LXXVII—No. 1 Hamilton, Illinois, January, 1937 Monthly, $1.00 a Year

Races of Bees

By V. Raykovsky,

Russia.

IN response to my article on the subject of wintering bees published in the November, 1935, number of the American Bee Journal, I have received several letters from America from which I note that many beekeepers of the United States are not fully satisfied with their management of bees. Colonies lose many bees during winter and consume too great a quantity of stores during the cold period of the year.

These correspondents tell me of their methods of management with bees which they conduct on a large scale, asking me questions and requesting that I write more often.

So, perhaps I shall this time tell something about races of bees because it seems to me that all the misfortunes in beekeeping of the majority of the northern part of the United States are due to the Italian bees.

Really it is difficult to imagine that a country as large as the United States, where the north and the south, and the east and west, have conditions in beekeeping so entirely different, should be satisfied with a single race of bees.

Any country having a territory more or less large possesses a number and often many races of bees. It is because the conditions of beekeeping are materially changed often even in localities close together. The greatest factor in these conditions is the time of the honey harvest.

When one compares races of bees, one takes into consideration ordinarily their different qualities: vigor, temper, color, storing ability, hardiness, disease resistance and other things.

But this judgment is of little importance in comparison with the time of harvest which should correspond with the nature of the bee. Because these two things are not in complete harmony, all the good qualities of the race are of little value.

For example, bees of the South, where the time of harvest of nectar and pollen is ordinarily longer than in the North, always suffer in a colder country from lack of stores in winter because their nature has adapted itself to a longer harvest season and they continue their work without the least attention to the absence of available nectar. They lose a great deal during their useless flights and develop a large amount of brood which continues even during harvest time so that the stores available for winter disappear from the hives and the beekeeper has considerable trouble in correcting this condition. All the life of the bee is directed by the time of harvest and if that time does not coincide with the nature of the bee, the beekeeper falls just that much short of perfection in the work of beekeeping.

In the six parts of territorial Germany, there are two races of bees. One ordinary or the local race, the other specialized for the late heather honey region in the valley of Lunebourg where the harvest lasts a month or more beyond any other part of the country.

This last race which probably originated in some part of the South, responds well to the favorable object of the long period of honey harvest but for any other part of Germany, it is of no value.

A correspondent from Oregon tells me about the great harvest which ends in their locality at the beginning of August. This is exactly the time of the close of the honeyflow from linden in all northern localities where no one would dream of introducing Italian bees. This correspondent also tells me that he must leave eighty pounds of stores for his bees per colony so they will not starve to death in winter or at the beginning of spring. This amount of provision is unusual under normal conditions with bees.

Another correspondent from South Dakota writes me that in their locality, they always have poor wintering but that they are trying to find the cause of it, but are not succeeding. It is quite likely that this misfortune comes from the same cause. I believe that American beekeepers need at least two races of bees.

I will go farther in my deduction. I will say that probably an unsuitable and unnatural management which enters into the American practice of killing bees in the fall and replacing them in the spring with package bees from the South is merely pursuing the same path, and that if those who practice this work can change the race of bees, they might no longer find it profitable to destroy the laborious little creatures.

I certainly thank my correspondents for their interesting letters and I hope that these words may convey to them my reply.

———ABJ———

Jankowski Joins the Benedicts

C. P. Jankowski, Illinois Deputy Inspector for Lake, McHenry, and Boone Counties, was married November 14, to Miss Frances Kanton, of Waukegan, Illinois. Most northern Illinois beekeepers know Jankowski. He is our Adonis—he is handsome and he does handsomely. Congratulations, Miss Kanton.

Honey from Red Clover

For fifty years there has been an occasional article in this magazine about bees working on red clover. Some of these reported considerable honey from this source. In view of the number of these reports there can be no question but that bees sometimes get something worth while from red clover.

In recent years there has been a great change in farm rotation. Due to the disappearance of bumblebees in so many localities there has been increasing difficulty in securing proper pollination and seed crops have been disappointing. In many cases farmers have given up red clover in favor of some other legume. Some specialists in farm crops are much concerned about this trend and are looking for a strain of red clover which is attractive to honeybees.

In order to give the matter some study the American Bee Journal would like to secure a small amount of seed from many different fields where bees have been seen to work on red clover. It would seem that some progress might be made in the desired direction by a simple process of natural selection. Beekeepers who know of cases where the bees have worked red clover will greatly favor us by putting us in touch with the right person from whom to secure seed.

Our readers who are interested in such problems and who know of promising strains of red clover will please write to the field editor of American Bee Journal and give him all possible information.

———ABJ———

Our Cover Picture

A new one for 1937. It is a change we think many readers will like and somewhat different from any American Bee Journal has had before. Who can send us really suitable pictures for that front circle? It takes a snappy, clear, close-up subject, with plenty of well defined detail and of unusual interest. For selected pictures we will give one copy of either of these three books autographed by the author — "American Honey Plants," by Frank C. Pellett; "Huber's Observations on Bees" or "The Honeybee" by C. P. Dadant, with a picture of the author for your own den wall. What say?

———ABJ———

Krebs Reports

H. M. Krebs, Supervising Entomologist, in charge of Apiary Inspection for California sends his annual report. 136,884 colonies inspected in 3883 apiaries. 1808 colonies diseased in 649 apiaries, 1.3% disease. A good record, Mr. Krebs.

The migration record is interesting. 73,797 colonies moved into and 76,080 moved out of state counties; inter-state moves totalled 13,507 colonies.

San Bernardino holds the banner for moving; Orange County second; Los Angeles third. Apiary registrations totalled 166.070 colonies in 4618 apiaries.

———ABJ———

Fair Booth Brings Extra Honey Trade!

By Glen Perrins,
Utah.

BY displaying honey in glass packs, tins and comb, together with wax in artistic designs and bees actually at work, the Rocky Mountain Honey Company, of Salt Lake City, stimulated trade more than twenty per cent following the big Utah state fair at which the booth was among the prize winners.

Thousands of prospective buyers thronged past the booth in the large agricultural show building and marveled at the attractive display—and later made purchases of similar stock in the nearby grocery stores. The booth featured placards:

"Sweet Clover Brand Honey"
"The Honey With the Flavor"
"For Those Who Want the Best"

Beautiful flowers topped the upper corners and center of the display and in the foreground and along the tiers of the booth was featured honeycombs and wax figures of various animals, together with prize ribbons won in past years.

Glass packs shown on the tier steps of the display included jars of honey—jelly made with honey, cakes sweetened with honey. One placard announced **"All White Honey Has No Flavor. We Make Excellent Creams and Blends."**

The display not only built up trade, but created considerable good will and favorable publicity and won wide comment for being among the best at the fair.

GUEST EDITORIAL

The Institute at San Antonio

By Richard D. Barclay,

New Jersey.

Personal.

I began keeping bees when I was fourteen years old, thirty-seven years ago. I had graduated from the rabbit business and craved chickens. Chickens were said to be a nuisance and it was suggested I keep bees, which were supposed to be good for orchards. At that time very few people knew why. Such, however, was the start and today I operate 700 to 800 colonies principally for the purpose of renting for pollination purposes to orchardists, cultivated blueberry growers and cranberry bog owners. While I get some honey in connection with this pollination work, the crops are necessarily less than normal due to the constant interference with the bees by these pollination jobs. I manage to have from ten to twenty tons of honey annually, however, which is disposed of largely to bakers, due to the Institute's stimulation of the use of honey by the baking trade. I make about 40,000 miles of truck travel in the course of a year in my movement of bees in and out of orchards, blueberry patches of bogs and in my honey production operations, all within the state of New Jersey.

— o —

Editorial.

I HAVE just returned from the San Antonio meetings. In recent years I have not been able to attend any of the national or international gatherings and certainly feel that this must have been the most successful meeting thus far held. Institute Day on Tuesday was certainly the high peak of the week's successes. Certainly the Institute made an impression upon Texas beekeepers, who had heretofore been somewhat indifferent. The Institute staff received cash and pledges at San Antonio totalling over $800.00 at last report. Perhaps it finally exceeded this figure.

The bread and cake display incident to the cooking contest was quite extensive and respresented material from widely scattered parts of the United States. No doubt the details as to the winners and the recipes involved will be sent out to the public otherwise. I do know that on the last afternoon when the winning samples were set out to be eaten, by those of us who were remaining over another night, everything was promptly cleaned up.

I was particularly impressed by the interest southern package shippers showed in the Institute. Many of us can remember when even the more prominent of these men did not feel their responsibilities toward the Institute. Now, however, all the large shippers are contributing and I overheard several of the newer and still small shippers expressing their final understanding of the relation between the package shipper and the ultimate sale of honey which the Institute encourages. It has been but perhaps natural for a man selling little or no honey but only bees and queens to feel some lack of concern as to the sale of honey. I am sure now, however, that our southern shippers appreciate that without the Institute and its help in stimulating the movement of honey that the sale of package bees and queens would lag very much.

The four hundred odd persons who tried to attend the banquet in connection with the San Antonio meetings on Tuesday night, whether they were from the North or South, certainly appreciate the Institute in connection with several makers of honey candy. After having been on display downstairs with the other exhibits for the first two days, this candy very acceptably supplemented the regular fare supplied at the banquet, sustaining many of us until morning. This was a large-scale demonstration of the nutritional value of honey, I am sure!

Among the many interesting developments due to the Institute contacts with other commodity organizations is the recent recipe sent out by the American Cranberry Growers Exchange. This recipe provides for baking ham with cranberries and honey and is given on one of the cards packed with each quarter barrel of cranberries distributed to the retail grocer. A quarter barrel of cranberries is twenty-five pounds and a pound of cranberries represents about one quart.

I am particularly interested in this development because of my indirect connection with the cranberry business. Next to Cape Cod in Massachusetts, New Jersey is the largest producer of cranberries in the United States. Wisconsin and Oregon produce some cranberries but the great bulk of the cranberries come from New Jersey and Massachusetts. I happen to rent bees for pollination purposes to most of the larger cranberry producers in New Jersey and it is particularly gratifying to see that their sales organization has turned its attention to helping us sell our honey, as well as using our bees in connection with the production of the cranberry crop. I fear I can claim no credit for this additional help but must give the entire honor to Mrs. Jensen. I have probably been too busy lifting beehives on remote and isolated cranberry bogs during all hours of the night to have given this feature of the possible cooperation of cranberry and honey sales the thought which I should have. I certainly will make it a point, however, at the next meeting of the American Cranberry Growers' Association to express to my several cranberry friends and to Mr. Chaney, the manager of the American Cranberry Growers' Exchange, our appreciation of its very helpful advertising.

We in New Jersey, where many of you sell your honey directly or indirectly, but where our production is relatively small, have always supported the Institute. Since the tonnage and state quota basis have been established, we have always exceeded our quota. I was especially interested to hear at San Antonio that New Jersey ranked tenth in 1936 in the amount of contributions.

Since my return from Texas I have talked with Mr. Mattis, the President of our State Association, and he feels that we should do still better in supporting the Institute. I agree with him that if we put on a little more pressure undoubtedly we could collect more funds. He and I therefore feel that we are safe in challenging any other state which will in 1937 double or treble its quota. We will increase our quota by any percentage which any other state does. While we are small we want to be spunky enough to stimulate the flow of funds to the Institute. It is doing a magnificent job at a ridiculously small cost. Have we any challengers?

EDITORIAL

A Look Ahead

1937—How many times will we receive a start when writing the new date. Hardly had we become accustomed to 1936 when it is gone and a new year is with us. "Happy New Year" is the greeting from all our friends at the dawn of the new year. Happy indeed may it be. To all our friends once again we extend the salutation and we very sincerely return the good wishes of all those who have sent such greetings to us.

After several years which brought severe trial and painful experiences the economic skies are clearing again and there are evidences of prosperity on every hand. Never has the prospect for the honey producer been brighter than now. While prices may seem to be a bit low, they are not far out of line with prices of other goods and the exchange value of the beekeeper's dollar is on a par with that of his neighbors engaged in other business.

There is a very general feeling of optimism among the commercial honey producers and many of them are preparing to expand their operations. Indications are that the general price level is rising and that one must expect to pay more for goods in the months ahead. The wise buyer will be forehanded in estimating his needs and order such bees and equipment as he may need early in the season. The easiest profits come from saving and the easiest saving comes from buying goods ahead of a rise. Already substantial increases have been announced in many kinds of merchandise. On a rising market all goods must go higher in order to maintain a relative position.

If you want package bees select your source of supply and book your order as soon as you decide how many packages you need. Likewise check your equipment and order your supplies. With favorable weather there is every reason to expect a prosperous year in this 1937.

—ABJ—

The Disease Resistance Program

We are pleased to present elsewhere in this issue the full report of the results of the second year of the cooperative experiment in disease resistance of the honeybee, carried on at Pellett Gardens, Atlantic, Iowa, by the Agricultural Experiment Station of Iowa, Iowa State College of Agriculture and this magazine.

It is needless to say that results have come up to the most sanguine hopes and have exceeded expectations of the sponsors of this project. It seems very definitely to have been proved that certain colonies of bees are resistant to American foulbrood. Some are able to remove the contagion from the hives and to recover from a substantial amount of the infection.

We are now faced with the problem of breeding a strain of bees which can be depended upon to inherit this character. This will involve the rearing of large numbers of young queens from this stock and eliminating those which prove susceptible until resistance is established as a dominant character.

Announcement has already been made of the plans of the U. S. Department of Agriculture to undertake this work along with a study of other factors of the problem. James I. Hambleton, chief of the bee culture office, has general supervision and he will announce details of his plans from time to time.

The American Bee Journal will continue to cooperate with the Iowa institution and to maintain the experimental apiary at Atlantic, Iowa. Efforts will be continued to find other stock which is resistant in order to secure the best which is available anywhere in the world from which to breed.

Reserve Pollen Supplies

It is very apparent that but few readers of this magazine understood the significance of the article "Influence of Pollen Reserves on the Surviving Populations of Overwintered Colonies" by C. L. Farrar in our September issue.

Unfortunately it failed to catch the interest of the casual reader. Farrar in Wyoming and F. E. Todd in California are making a study of the relation of the pollen supply to colony activity and some very important information is coming to light. It is probable that the work that these men are doing will do as much to insure the prosperity of the honey producer as any investigation in the beekeeping field for many years to come.

Once our attention is called to it we are surprised that the importance of a supply of stored pollen has not been more generally recognized. It now seems very probable that many localities which are regarded as poor for honey production would return good crops if the bees had a supply of pollen in the hives from which to rear brood in advance of the honeyflow.

We have heard much about cases where the bees built up on the crop instead of ahead of the crop, but the reason has not been stressed. In most cases it is apparently because the bees have no reserve of pollen to enable them to get ready for the coming crop.

We can expect to hear much more on this subject and our readers should not overlook any opportunity to inform themselves fully. It may be necessary to move bees to localities where pollen is available to build them up in time for good flows. Or perhaps it may be possible to develop a trade in combs of stored pollen from localities where pollen is abundant.

Some plants which yield nectar freely yield little or no pollen and in localities where there is a scarcity of pollen in fall the bees are sure to be weak at the start of an early spring flow. With a good supply of stored pollen left in the hives in autumn there is a good chance to build up the colony strength in time for early crops. With ample pollen reserves there is likely to be sufficient winter breeding to provide replacement of loss of old bees.

It seems probable also that some shippers of package bees will find their problems greatly simplified once they become familiar with the value of stored pollen reserves. Even inclement weather is not likely to greatly delay spring brood rearing where the bees have ample stores of both honey and pollen. Without the stored pollen, brood rearing cannot continue in weather which will not permit the bees to bring fresh supplies from the field.

In short, there are strong indications that many cases of spring dwindling and slow spring breeding are simply the result of a short supply of pollen.

With ample supplies of stored pollen many orange locations would show big crops of honey which have seldom done so. With such stores many package shippers would be able to supply their customers a month earlier than they have been able to do. With pollen supplies the general average return from honey production would be substantially higher.

This is something which may well receive the attention of every one among us and special attention may well be given to securing a supply of "pollen clogged combs" to be laid aside for use as needed.

—ABJ—

Weather Vagaries

No one perhaps is more dependent upon the weather than the beekeeper. Although there is nothing that he can do about it, it does seem that he should know as

much as possible concerning its vagaries and the effect upon his business.

A recent bulletin, "Thirty-Six Years of Weather in the Red River Valley" by R. S. Dunham, of the Crookston, Minnesota, Experiment Station, offers much of interest. Reading it one is impressed with the great variation in weather conditions from year to year and the uncertainty which makes it difficult for one to anticipate the things which he must face.

The longest frost free period was 171 days in 1914. The following summer brought the shortest frost free time with only 78 days. It often happens that an unusually dry summer is followed by a winter with more than the usual snow. Thus do extremes follow each other.

There are some interesting incidents which are hard to explain. For instance in 21 years it has not rained on the fifteenth of August while on the sixteenth it has rained nine times.

It appears that the only certain thing about the weather is its uncertainty. Hot or cold, wet or dry, plant growth and honey yields are affected favorably or adversely but as yet we have not learned how to tell what the weather is to be.

—ABJ—

Red Clover and Honeybees

For half a century at least the American beekeeper has been discussing the possibility of developing a strain of red clover adapted to the needs of the honeybee. In times past there has been much interest in so-called red clover bees, but during all this time the cultivation of red clover as a field crop has gradually declined. Destruction of their nests has resulted in the near extinction of bumblebees in many highly cultivated areas with the result that profitable seed crops from red clover have become rare.

A few months since the announcement was made that Prof. Joffska, of the University of Prague, had developed a strain of red clover with short corrola tubes. Investigators in this country were much interested and anxious to secure seed, but as far as this writer has been able to learn have not yet been able to do so.

At the Indiana Beekeepers' Convention Frank N. Wallace told of the experience of a beekeeper who kept a large apiary in the vicinity of a field of red clover. The seed from this plot was saved for a number of successive years with the quantity gradually increasing. In the course of natural selection the plants best adapted to the honeybees would be the ones to set the most seed and it was thought that some progress in the direction of a satisfactory development had been made.

With all the discussion on the part of the beemen but little attention has been given to this problem by plant breeders until now. Of late it has become apparent that unless such breeding is undertaken red clover is likely to disappear as an important field crop in many farm areas.

So much progress has been made in plant breeding in other fields that there is reason to believe that it is possible to develop red clover which may yet become an important source of honey.

—ABJ—

The Apple Institute

Dr. H. E. Barnard, who did such a good job at launching our American Honey Institute, is now at the head of the National Apple Institute. He is following much the same methods with the younger organization and has secured splendid results for the effort thus far expended.

He reports that newspapers and magazines now regularly making use of the material put out by the apple institute have a combined circulation of thirty-four million. Can anyone doubt that the merits of apples thus placed before so many people can fail to have an important effect upon the demand for the fruit. Perhaps it may account in part for the better prices now received by the American apple grower though short crops also helped.

Since apples and honey never come into competition but very often may well go along together the institutes representing the two products are able to serve each other helpfully on frequent occasions.

Historical Material

To the student of history such things as programs and accounts of special occasions are of great value, yet they are most difficult to secure. Now that provision has been made for caring for all material of historical value at the libraries devoted to beekeeping, especially at Wisconsin University and at Cornell University, we should not overlook saving such things.

If secretaries of all beekeepers' organizations would make it a rule to send copies of all programs to these libraries they will confer a lasting obligation on those who have occasion to seek information regarding present day activities in years to come.

—ABJ—

Our Honey Containers

A letter from a friendly English correspondent offers some worthwhile criticism of honey containers in common use in this country which may well be given consideration. From his letter we quote:

> "Your retail packs look like nightmare to us. They look like the invention of a man suffering from delirium. The whole trend in this country (England) for years has been toward a low wide jar from which honey can be taken easily.
>
> "Your troubles are caused by the fact that you have allowed your public to get the impression that honey is naturally a syrup, instead of, as here, a solid which must be liquefied if required in that form for use with cereals, etc.
>
> "You habitually melt all your honey and spoil it, so you have to put it in a very narrow jar to make it look pretty."

There has been much complaint of late, of the tall narrow jars on the part of those who come into contact with the consumers of honey. It has been repeatedly pointed out that the wide and shallow jar is far better for the average housewife and that the use of such a package is more likely to encourage a repeat order.

—ABJ—

Bees and Fireblight

Since suspicion has pointed for several years to the honeybee as a possible carrier of fireblight much interest attaches to the recent studies of Hildebrand and Phillips on this subject. The bulletin dealing with their results is reviewed elsewhere in this magazine. It is reassuring to find that the very careful tests which they carried on indicate that the fireblight organism is incapable of overwintering in the beehive and that there is no reason to suspect the hive as a reservoir of infection for the orchard.

Beekeepers suffered because of this suspicion in orchard districts and it is to be hoped that the results of this investigation will become widely known among fruit growers.

—ABJ—

Holiday Sales for Honey

It would seem that there is a sadly neglected market for honey in the holiday trade. Special packages might well be prepared for this special market. At the Christmas season the public is in the mood to buy luxuries and many could be induced to buy honey at that time who do not consider its purchase otherwise.

While no effort should be spared to widen the outlets for honey in the staple field we cannot afford to neglect the special market which the holiday season offers. This can only be secured by special care in preparation of the package and special sales effort in bringing the product to the consumer's attention.

O. A. C. Honey Strainer

By W. G. le Maistre,

Ontario.

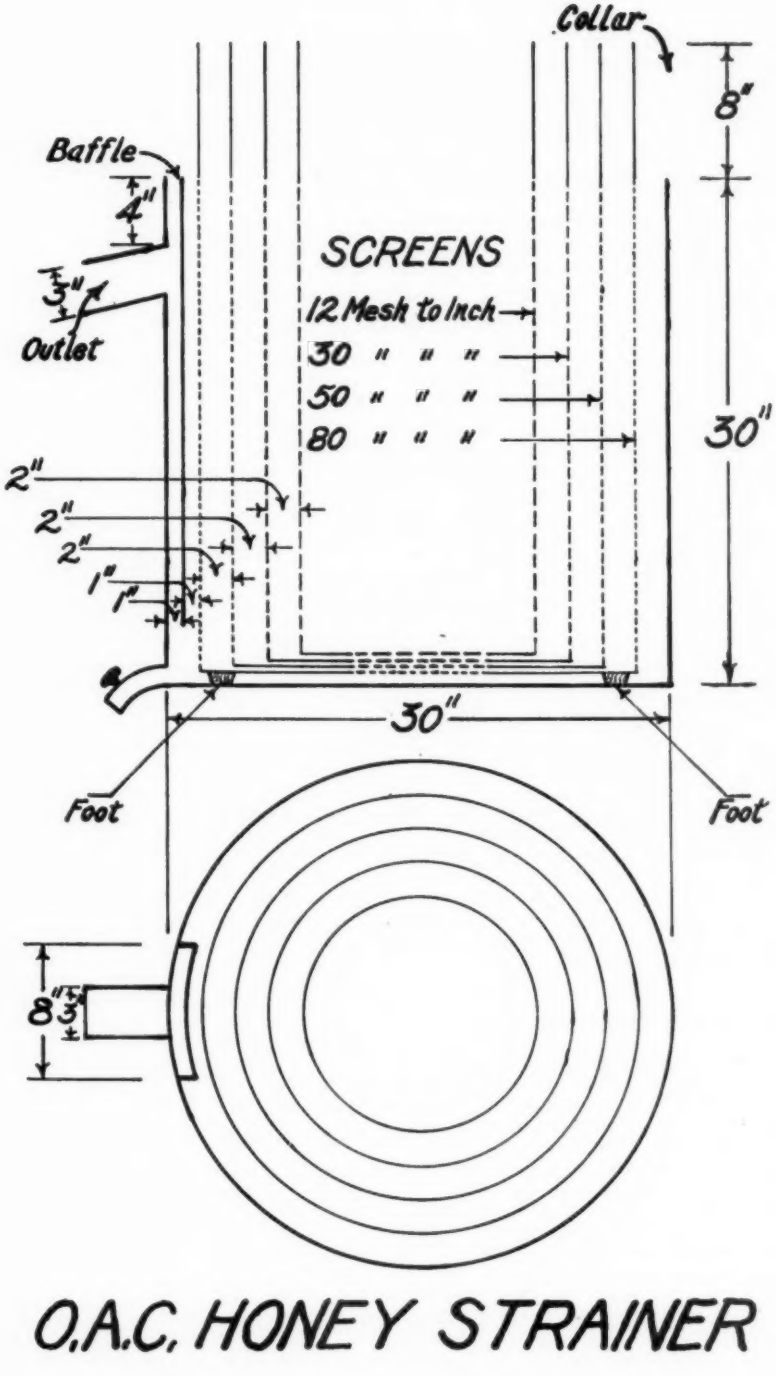
A HONEY strainer to be useful to all classes of beekeepers must embody the following features—(1) It must be able to accommodate at least one day's run of extracting before it is necessary to clean the screens. (2) It must clean the honey better than any system at present in common use. (3) Its cost must be low enough that all beekeepers can afford to use it. (4) It should strain the honey at normal temperatures (70° F. to 90° F.), because heating honey that contains foreign particles darkens it and impairs its flavor. (5) It must be convenient to drain and clean.

Grading regulations and popular demand call for a much cleaner honey than the average beekeeper is able to pack with the methods commonly used. A packer, when he repacks honey, is obliged to heat it. If such honey is dirty it will darken and take on flavors that should not be present. Furthermore, dirty honey is a hindrance to the packer because it holds up his operation.

The Apiculture Department at the Ontario Agricultural College has been conducting some tests in an effort to devise a system that would aid the beekeeper in this problem of cleaning his honey. A strainer has been developed which in all respects is superior to anything that Ontario beekeepers have yet devised.

The strainer finally developed operates on the following principles: First overcoming the surface tension of the honey; second, a gradation of decreasing mesh sizes of metal cloths and relatively increasing straining areas of these metal cloths; and third, correct relation between the rate of flow of the honey and the size of the straining areas.

The accompanying diagram explains the method used fairly well. Four metal cloth screens were used. The center screen is the coarsest, and the outer screen the finest. The honey flows into the center screen. A float was used in the center screen to prevent the honey from churning as it flowed in. The screens are in the form of cylinders, each one having a galvanized iron collar, and each is supported by galvanized wire mesh (¼"). A baffle arrangement causes the honey reaching the outlet to be



Drawing to show construction of O.A.C. honey strainer. It is fully described in text.

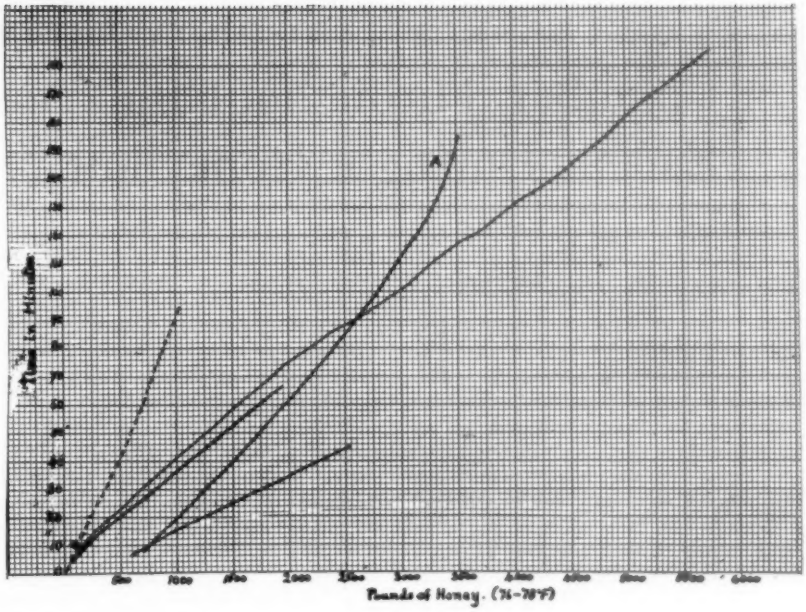


Diagram to depict the results of tests made with the smaller strainer. The dotted line shows the rate of flow when a 100-mesh screen is added to the other four. Curve "A" was on honey that had begun to granulate.

drawn from the bottom of the straining tank. This aids in holding back foam. This baffle can be fitted inside the tank, as shown in the diagram, or may be soldered on the outside. In any event, it must have a cross section area of at least 8 square inches. The outlet should be at least 4" from the top of the tank, so that there can be no danger of overflowing, and it must be at least 3" in diameter. The reason for the outlet being near the top of the tank is that this strainer only works properly when there is honey on both sides of all screens. There is a drain tap at the bottom of the tank to allow for draining and removal of the screens for cleaning.

The accompanying table gives the specifications of the screens used:

Mesh	Size of Opening	Metal	Size of Cylinder	Area (Approx.)
12 to inch	.065 inches	Tinned	30" Deep 14" Diam.	1320 sq. in.
30 to inch	.0238 inches	Tinned	30" Deep 18" Diam.	1800 sq. in.
50 to inch	.0125 inches	Monel	30" Deep 22" Diam.	2100 sq. in.
80 to inch	.007 inches	Monel	30" Deep 26" Diam.	2460 sq. in.

It is recommended that the honey, coming from the extractor, flow into a tank with a baffle plate in it before going into the strainer. If all the large particles that come from an extractor are allowed to go into the coarse or center screen it will clog up too rapidly.

It is also recommended that the flow to the strainer be so regulated in this baffle tank that a steady stream be delivered. Otherwise when the flow is very heavy, as it is periodically from the extractor, the screens may overflow.

The strainer as described above will take nine tons of honey without artificial heat before it is necessary to drain and wash the screens.

When the flow of honey through the strainer slows down very much it should be drained and the screens removed and washed with cold water. If they become quite clogged before an attempt to drain them is made they require hours of time to empty.

The cost of these screens is about $25.00 in Ontario.

The small beekeeper does not require a system anything like as large as the one described. The following table gives the specifications of another strainer that is similar to the one described above, but having rather less than half the straining area:

Mesh	Size of Opening	Metal	Size of Cylinder	Area (Approx.)
12 to inch	.065 inches	Tinned	26" Deep 7" Diam.	572 sq. in.
30 to inch	.0238 inches	Tinned	26" Deep 9" Diam.	780 sq. in.
50 to inch	.0125 inches	Monel	26" Deep 11" Diam.	936 sq. in.
80 to inch	.007 inches	Monel	26" Deep 13" Diam.	1066 sq. in.

This smaller strainer will handle three tons in three hours, providing most of the coarser particles are removed by a baffle tank before the honey is put into it.

Use of the O. A. C. Honey Strainer should cut the costs of extracting. By straining the honey as it comes from the extractor it is possible to cut down on the number of tanks a beekeeper requires. There is no delay between extracting and canning the honey. Artificial heating can be eliminated.

Many commercial beekeepers in Ontario are satisfied that at last we have a straining system that will really work.

The accompanying graph shows the results of tests made with the smaller of the two strainers. The dotted line shows the rate of flow when 100 mesh screen is added to the other four. The curve marked "A" was on honey that had begun to granulate.

———ABJ———

Export Note

Honey is more plentiful in Russia than in any part of the world, whereof they spend great quantity in their ordinary drink (which is Meade of all sorts) and many other uses, and yet good quantity is carried out of the country, which may better appear if we take notice that there has been shipped yearly of wax a thousand tun, and yet the great men use but little tallow, but much wax for their lights.—From Purchas, 1625.

W. H. Hull,
Virginia.

———ABJ———

A Useful Publication

A new departure in information for honey producers is now available from the field station of the Bee Culture office of the Bureau of Entomology at Davis, California. It is entitled "Distribution of California Buckeye in South Central Sierra Nevada Counties, in Relation to Honey Production." It is by George H. Vansell and Wm. G. Watkins.

Due to the heavy losses of bees in areas where buckeye abounds an effort has been made to man the areas where it occurs so as to assist beekeepers in finding locations free from this danger. About a dozen maps are shown with streams, lakes and other points in several counties with the range of the buckeye. Beekeepers wishing to locate in this territory will do well to secure the publication and thus save themselves much effort in becoming familiar with the region.

Honey Getting

PART VIII

Continued from December, page 588.

The Use of a Two-Story Brood Chamber Throughout the Year Except During a Honeyflow

By E. L. Sechrist,

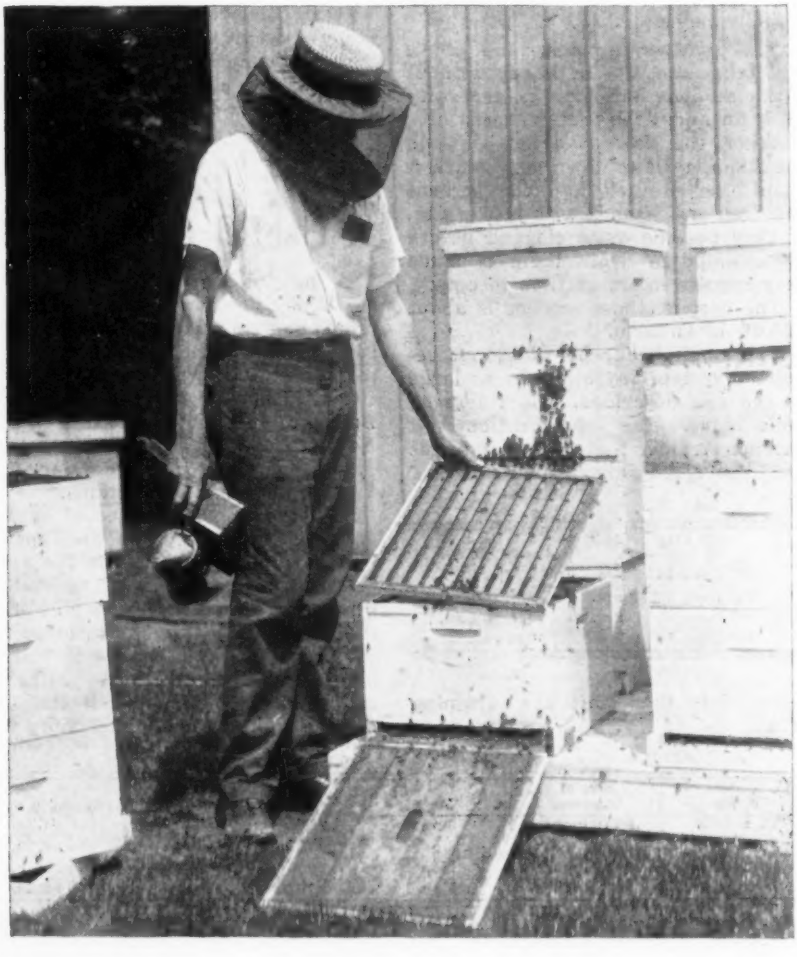
Tahiti.

Editorial.

This is the last of a series of articles in yard management by E. L. Sechrist. The series began in our March number, 1936, under the title "Honey Getting." Second in April, page 188, "Essential Factors in Profitable Honey Getting and How to Provide Them." No. 3 in May, page 245, "A Clear Brood Nest Method." No. 4 in June, page 348, "Getting Uniformity in Colonies." No. 5 in September, page 446, "The Control of Queens and Swarming." No. 6 in October, page 494, "Keeping the Bees Good Tempered." No. 7 in December, page 588, "Systems of Management in the Clear Brood Nest Method," and the present or 8th part which concludes the series.

Up until the October number, we gave a summary each month of the entire series. In the last two parts, we have not done so. Interested readers should now study the entire series since this is the last of it to be published.

We have many letters expressing interest in the fundamentals of beekeeping management which have been taught by these articles and we are happy to say that they will shortly be followed by a second series from Mr. Sechrist's pen dealing with the handling of honey and the management of the modern honey house.



In this clear brood nest system, the queen, just before swarming time, is put below an excluder in a new brood nest.

The Use of a Two-Story Brood Chamber Throughout the Year Except During a Honeyflow.

WHEN this system is worked properly, the queen is allowed free range, in the spring, of at least two stories, perhaps three, the two lower stories being the two brood chambers, containing ten frames each, in which the colony has wintered. The third story, and other later added supers, may contain eight or nine frames each, or may be shallow supers.

Before the honeyflow begins, the colony will be of standard honey-storing strength, both brood chambers being well filled with brood if the queen is good and has not been prevented from laying in both of them because of any imperfections in the combs. As soon as supers are added, the queen probably will desert the lower brood chamber and lay in a super. After all the brood in this lower brood chamber has been sealed, but before any colonies have swarmed, the queen is put down into it and a queen excluder placed above it. If the queen cannot readily be found, the bees from the upper brood chamber, together with the queen, may be shaken into the lower one. This lower brood chamber which now contains only some sealed brood and perhaps considerable pollen and some honey, provides the queen with a new clear brood nest, and under proper conditions, prevents swarming, and places the colony in excellent condition for storing honey.

Immediately above the queen ex-

cluder are then placed whatever extracting supers are needed at the time, and above these is placed the upper brood chamber containing brood. It is good practice ten days later to remove all the queen cells from this brood but it is sometimes possible to mate a young queen from this upper story of brood if an entrance, such as an auger hole, is provided and a second queen excluder or an inner cover with a bit of excluder over the bee escape hole is placed beneath it. After the new queen has established a brood nest in this upper story, it may be set off with a bottom board and cover on a new stand, and used either for increase or for requeening the parent colony later in the season. This hive body is usually so crowded with honey that the young queen has little room in which to lay, so that the new colony remains a nucleus all summer, which is the desired condition unless it is to be used as increase, when more room is given for egg laying. Frequently, however, such queens may be inferior because from inferior stock or from larvae that were too old. Instead of depending on the bees in this upper story to rear their own queen cells, it is better to give these top stories of brood a ripe queen cell after cutting out all the queen cells that have been started on their own brood.

Many beekeepers do not cut out these queen cells in the top story, and provide no exit for the virgin queens, but this is not the best practice. When so shut up, being above a queen excluder, the young queens sometimes die or are killed, but they frequently remain alive a long time, then escape at some time when the hive cover is removed, returning into the parent colony or into some other colony and sometimes superseding the queen in it. This would not be so bad if the young queen were of good stock and could be depended on to be a good one, but a virgin that has remained shut up for some time before mating seldom amounts to much. If she does not become a drone layer the same season, then she may be useless or missing the next spring.

When comb honey is being produced, several comb honey supers are placed above the lower brood chamber into which the queen has been put. No queen excluder need be used, but an inner cover, with a long slot at each side next the wall of the hive, is placed on top of the comb honey supers and just beneath the upper brood chamber which contains most of the brood. This board protects the sections from travel stain and yet permits the bees to pass freely enough. If a young queen is reared in the upper brood chamber she goes down and out the entrance to mate. Returning, she remains in the lower brood chamber, supersedes the old queen; and the upper brood chamber from which, by this time, all the brood will have emerged, becomes filled with honey for winter stores.

In the standard ten-frame hive, this hive body which was formerly the upper brood chamber, still contains the ten choice old brood combs and not the eight or nine thick combs as used in extracting supers, and this is the hive body, unless it has been used to make increase, which is left with the bees after removal of the supers, again becoming the upper brood chamber of the two-story hive in which the bees are wintered.

This putting up of brood and putting the queen in the lower brood chamber below an excluder is often called "demareeing"—it having been popularized by Mr. Demaree. If the season is such that swarming is persistent, this demareeing procedure may be repeated, and the queen given a clear brood nest the second time.

Demareeing must be done with due regard to the season, the weather, and the honeyflow conditions. If an error is made in putting up brood, much of it may be lost, the morale of the colony injured, and much of the expected honey crop may be lost.

Forced Supersedure.

A variation of this system is much used in localities having a long honeyflow. Either at the time of putting up brood, or a week later after most of the brood is sealed, the upper brood chamber, or it may be a shallow food chamber, is set on a new bottom board, or even on the ground, near the parent colony instead of on the stack of supers; and this new colony is then given a choice queen cell or a virgin which should soon become a laying queen. In this way all field bees are caused to return to the parent colony, and the frequent handling of the upper brood chamber, or of the food chamber, becomes unnecessary during the summer; and, when fall comes, as the main honeyflow draws to a close, or at any time up until the colonies are prepared for winter, requeening is accomplished without dequeening by placing the new colony with the young queen on top of the parent colony. In following this plan, which is called forced supersedure, the new colony, already being in a brood chamber of ten good combs, is simply set on top of the parent hive with nothing between the two brood chambers except one or two thicknesses of newspaper having a few small holes punched through. As a rule the old queen disappears and the young queen from the upper brood chamber becomes the head of the colony. If the parent colony is placed on top of the new colony, the new queen is likely to be killed. Of course, to make certain that the young queen survives, uninjured, the old queen may be hunted out and killed before the two colonies are united. The upper brood chamber, usually pretty well filled with honey so that the young queen has become crowded for room, becomes full of honey if the late flow is good, and supplies winter and spring stores as well as good combs for spring brood rearing. Any necessary rearrangement of combs can be made after the two colonies have united; and, with a young queen heading the colony, plenty of young bees should be reared for good wintering. If additional stores are needed for winter, although this is seldom necessary, they are better supplied by feeding than by crowding into the brood chamber thick combs of sealed honey taken out of supers. This variation is particularly applicable to comb honey production and is one of the plans worked out by Demuth in his apiaries.

These plans of requeening and forced supersedure are designed to use more bee labor and less man labor, and fit in well with this third clear brood nest system, which is based almost wholly on the idea of saving labor through handling of bees by apiaries instead of by individual colonies. It is better adapted for the expert than for the beginner who has not yet acquired a thorough knowledge of the principles involved in the clear brood nest method.

With his system of apiary management worked out satisfactorily for himself and his locations, the manager of an apiary business may well turn his attention to careful study of apiary equipment and honey houses, methods of extracting and handling honey, and other factors affecting his earnings. These matters are considered in following issues.

ABJ

European Foulbrood

A recent publication of the Rothamsted Experiment Station of Harpenden, England, is devoted to European foulbrood. The title is "Studies of European Foulbrood of Bees" by H. L. A. Tarr. It is publication 136 Department of Entomology of the Station.

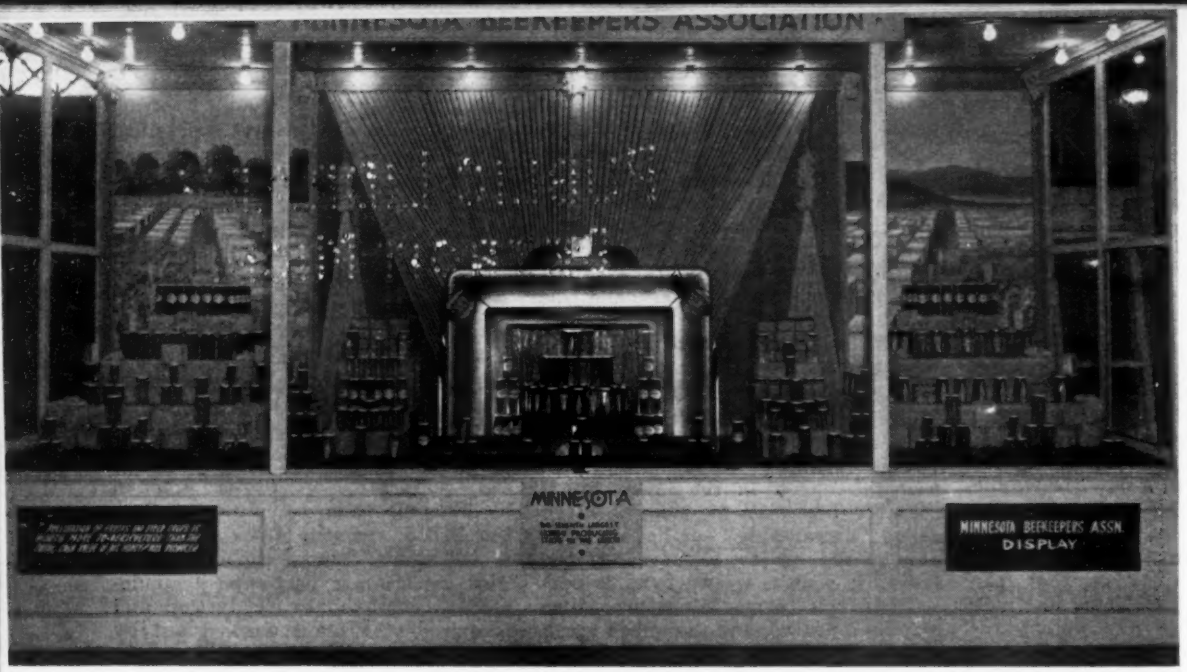
The publication is well printed and illustrated with plates.

ABJ

Sugarless Candy Made

Fred Stoneburg, a candymaker for 30 years, has perfected a new type candy made without sugar. He uses honey and vegetables only. He has made spinach caramel, carrot nougats, tomato surprises, and numerous other candies, all without chocolate or sugar.—(United Press Notice, May, 1936.)

Alfred Pering,
Florida.



A thing of beauty and joy forever. Rojina made a majestic and inspiring picture for all to see.

Minnesota State Fair Exhibit

By Frank A. Rojina,

Minnesota.

Are our Minnesota beekeepers in step with other states? Yes, I believe they are, even one step further. A year ago some of the more active beekeepers decided that we should put up a large Beekeepers' Association exhibit at our Minnesota State Fair. The honey for this display was to be donated by beekeepers throughout the state and after the State Fair this honey was to be sold and the proceeds turned over to the American Honey Institute. The first year we received more honey than I was able to provide space for. That is, the idea went over big. Express and freight charges were paid by the State Fair Board up to $50. This year the State Fair Board gave us $150 for this purpose. This money took care of our expenses in setting up a display of which you see a picture in this issue. Freight and express charges, honey demonstration expenses also were paid from this appropriation. The number of doners increased almost double and when the Fair closed this year $178.22 was realized from the sale of honey. I was rather proud to send that much money to the American Honey Institute and I believe Mr. Wilson and his staff can make good use of this money in furthering the cause of the beekeepers.

Let me also mention that this Minnesota Beekeepers' Association display is not the only attraction of honey for the Minnesota State Fair but only one thing of a main show which takes in a large portion of the dairy and bee building. We have also large glass cases where ten individual beekeepers put up displays for competition. The first prize for these individual displays is $55. We also have twelve classes where comb and extracted honey, bees, beeswax, baked goods and canned goods are displayed for competition by a large portion of the beekeepers throughout the state. For this purpose $450 is awarded. All of this money has been awarded this year; so it shows the real enthusiasm among the beekeepers of the state. We also have a most up-to-date State Department of Apiary Inspection booth under Mr. A. G. Ruggles, State Apiary Inspector. This display is our ABC and XYZ for the beekeepers of the state and believe me we are proud of it. Problems are solved for small as well as large beekeepers who seek information supplied by inspectors therein.

And then we come to the Honey Corner of Mrs. Earl Rood, Minnesota Beekeepers' Association and Honey Institute demonstrator. Did you have a chance to see her? She was blanketed by women folks. It reminded one of an anniversary bargain counter the way they carried away 20,000 recipes and about as many copies of recipes put up for that purpose. Does that prove to you that advertising pays?

When you independent beekeepers feel that you don't need to advertise honey because you say, "Honey sells itself," come to the fair, any fair, and convince yourself that it pays to join others in giving honey for this cause. You may be a good salesman of honey but you can't sell to the public that is not honey-minded if they do not even know that honey is good in everyday diet, in cooking,

baking, etc. Sugar sweetens but honey sweetens and flavors. This is why all this education and demonstration is so important to a beekeeper. I believe every beekeeper should in this way support the American Honey Institute; let the contribution be ever so small it is always welcome.

If this article gives you an idea about your own state and the improvements that you may be able to make yourself I will be repaid for my small efforts in trying to picture to you that beekeeping needs you.

—ABJ—

United States Civil Service Examinations for Entomologists

Two examinations are announced by the Bureau of Entomology and Plant Quarantine of the Department of Agriculture; for Associate Entomologist at $3,200 a year and Assistant Entomologist at $2,600 a year. Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than January 14th from the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming; and by January 11th if received from states other than those just named.

These are open competitive examinations for vacancies in the Bureau of Entomology and Plant Quarantine and the successful chosen applicant will have the following duties: Associate Entomologist — to plan and carry out research in entomology or research in apiculture or forest entomology. Assistant Entomologist—to perform similar duties with less actual supervision of projects.

Applicants must be citizens of the United States and a resident of their State or Territory for at least 6 months before the closing date for receipt of applications. They must have completed a 4-year course leading to a bachelor's degree in a college or university of recognized standing with major work in entomology and they must have had experience in responsible research in apiculture or forest entomology for three years for the position of Associate Entomologist and two years for that of Assistant Entomologist. Applicants for Associate Entomologist shall not have reached their forty-fifth birthday, and for Assistant Entomologist, their fortieth birthday.

Interested applicants may obtain the forms necessary from the Secretary of the Board of the United States Civil Service Examinations at any first-class post office, or from the United States Civil Service Commission, Washington, D. C.

—ABJ—

Honey Divinity

2½ cups sugar
½ cup honey
½ cup water
2 egg whites
¾ cup nut meats

Blend honey, sugar and water. Cook to 256° F. Beat the egg whites until stiff, then pour the hot syrup in a thin stream over the egg whites, beating constantly. Continue beating until it loses its gloss. Pour into a buttered pan and mark into squares.

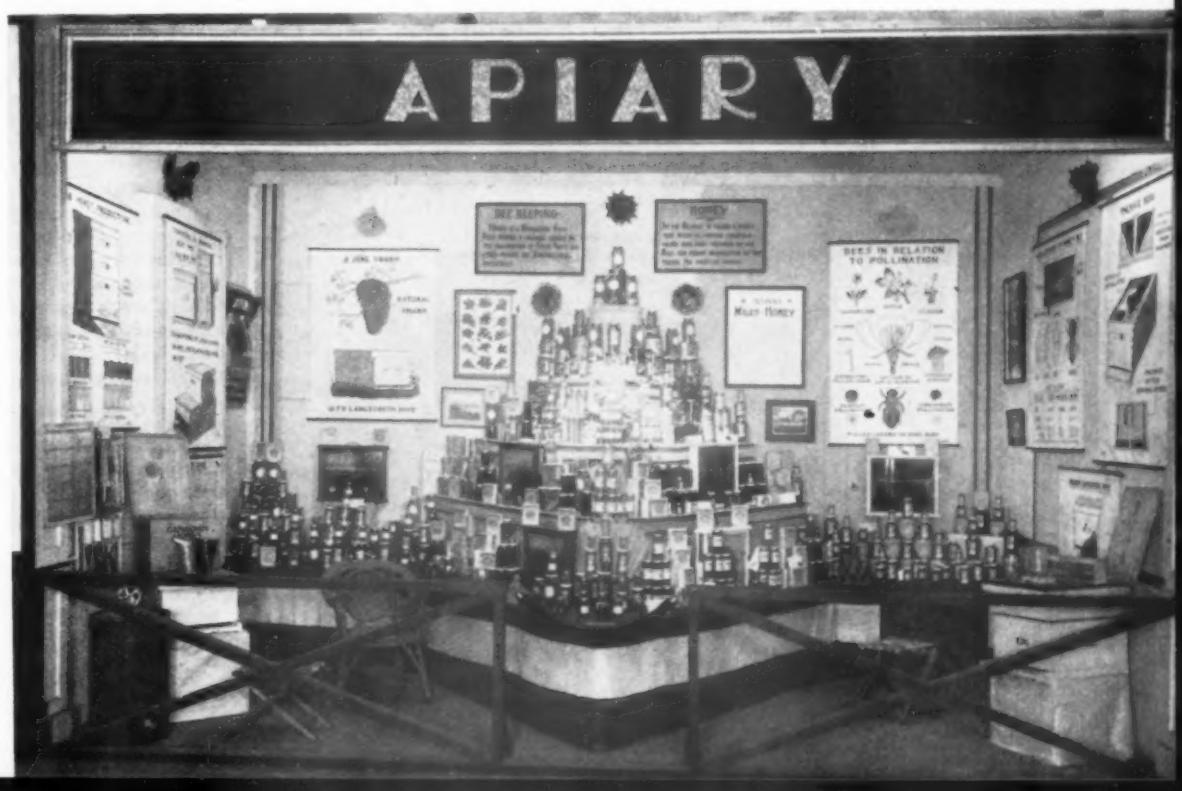
Helen Davidson,
California.

—ABJ—

Nova Scotia Provincial Exhibition

THROUGH the kindness of H. S. Payne of the Nova Scotia Department of Agriculture at Truro, we are favored with the picture of the Provincial Exhibition. The exhibit was contributed to by the Beekeepers' Association and the Department of Agriculture with the feeling that one of the best ways of advertising the product of the hive was through the medium of educational exhibits at the larger fairs. H. S. Payne arranged the exhibits himself.

Nova Scotia is advancing rapidly in its marketing problems now having a Provincial seal for standard of excellence and a guarantee by the packer. The Nova Scotia Empire Fruit brand is rapidly becoming known on our eastern markets.



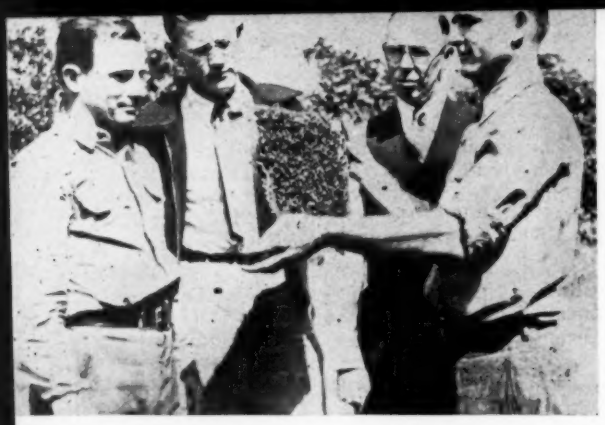


Fig. 1. Texas officials inspecting resistant stock from the Iowa Experiment Station. Left to right: C. J. Burgin, Apiary Inspector; S. W. Clark, Entomologist at Weslaco Substation; Dr. F. L. Thomas, State Entomologist; and C. E. Heard, Chief Apiary Inspector.

Disease Resistance and American Foulbrood*

Results of 2nd Season of Cooperative Experiment

By O. W. Park, Frank C. Pellett and F. B. Paddock,
Iowa Agricultural Experiment Station,
Ames, Iowa.

RECOVERY from American foulbrood without treatment has been reported in a number of cases. Those familiar with the ravages of this disease in the apiary have put little or no faith in such reports. The increasing frequency of these reports, however, has made it all but imperative that the matter be thoroughly investigated.

Experimental work to determine whether such a thing as resistance to American foulbrood exists in honeybees was launched in the spring of 1935 by the Iowa Agricultural Experiment Station with the Agricultural Extension Service of Iowa State College and the American Bee Journal as cooperative agencies. Results of the first season's work, together with a brief history of the problem and an outline of the set-up of the agencies participating in the investigation, were reported on pages 12 to 15 of the American Bee Journal for January, 1936.

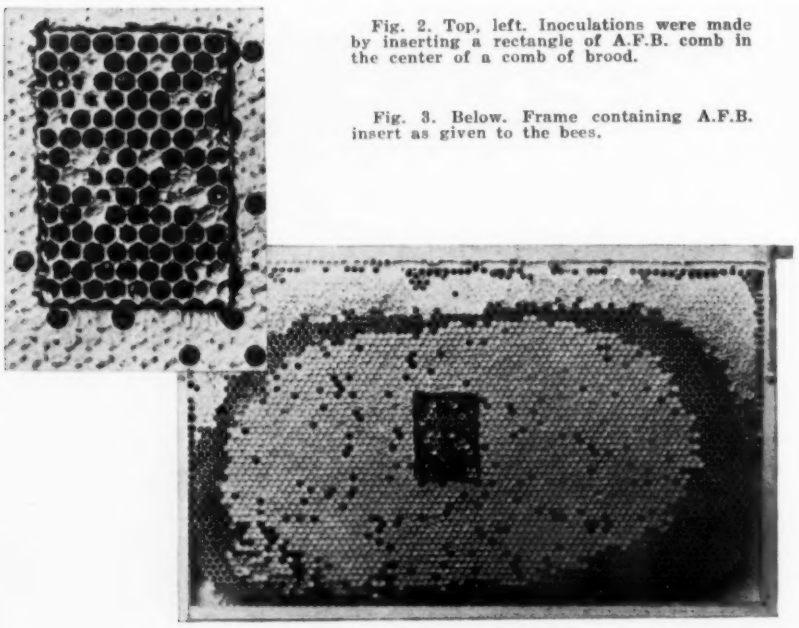


Fig. 2. Top, left. Inoculations were made by inserting a rectangle of A.F.B. comb in the center of a comb of brood.

Fig. 3. Below. Frame containing A.F.B. insert as given to the bees.

It may be recalled that under the authority of the State Apiarist, an official testing yard was established at the Pellett Gardens, Atlantic, Iowa, where 45 colonies of presumably resistant stock were brought together from widely separated sections of the United States. Of this number, 20 were received too late for testing the first season. The other 25, together with six check colonies, from ordinary stock, were inoculated with uniform doses of diseased material. Following inoculation all six check colonies took the disease promptly and showed no signs of recovery, while of the 25 presumably resistant colonies, seven cleaned up all symptoms of the disease before fall. Thus, it was demonstrated that **resistance to American foulbrood does exist,** and our **first objective** had been reached.

O - Second Objective.

Our **second objective** was **to determine whether the factor for resistance could be transmitted to offspring.**

The next requisite then was to rear

*Journal Paper No. J-402 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project 515.

daughter queens from our resistant stock and to have them mated to drones, likewise from the resistant stock. These queens would then be used to head colonies which, in turn, would be inoculated with American foulbrood to determine their resistance or lack of it.

Since the shortness of the active season in Iowa would scarcely permit both the rearing and the testing to be completed in a single season, it was decided to take our resistant stock to some point in the southern states where queens could be reared early enough to have them arrive in Iowa in time to head colonies that could be tested the same season, thereby accomplishing in the one season what otherwise would require two. The Lower Rio Grand Valley in southern Texas seemed to offer the greatest possibilities for our needs, so a request was made to Dr. F. L. Thomas, State Entomologist of Texas, for permission to conduct our queen rearing operations in that region. His reply not only granted our request but offered the use of the facilities of the sub-station of the Texas Agricultural Experiment Station at Weslaco, should they seem desirable to us. This generous offer was accepted and upon arrival in the Valley, we found we had at our disposal not only desirable facilities but also the valuable assistance of Mr. S. W. Clark, Entomologist of the local station.

Then one day in February, we were pleased to have an opportunity to invite the Apiary Inspection force of Texas to examine the colonies we had brought into their state. These colonies were still on the same combs in which American foulbrood had developed following inoculation, but the Texas officials found them free from disease. This naturally was the source of considerable satisfaction both to the Texas officials and to us. The photograph shown in fig. 1 was taken on this occasion.

After numerous scouting trips, a site in the midst of a 25,000 acre citrus orchard was selected for use as an isolated mating station. Here natural matings were possible with drones from one colony or another selected from our resistant stock, and it is probable that no matings occurred with drones from any other than the selected source.

Before the first of May a shipment of three frame nuclei headed by Texas-reared daughters of our resistant stock arrived at our official testing station at Atlantic, Iowa. By the latter part of June most of these had built up to normal colony strength and were inoculated. For the benefit of those who may not have seen last year's report, the procedure used in making inoculations is repeated here.

A rectangle of comb approximately 2x2½ inches was removed from a comb in the center of the brood nest and replaced by a similar rectangle cut from a comb containing numerous scales of American foulbrood. The inoculation rectangles each comprised more than 200 cells, of which approximately half contained scales of American foulbrood (figs. 2 and 3). In no case was the number of scales less than 75.

As explained in the previous report, all combs used in making inoculations were taken from a single source in order to eliminate variations which might result if material from more than one source were used. It was con-

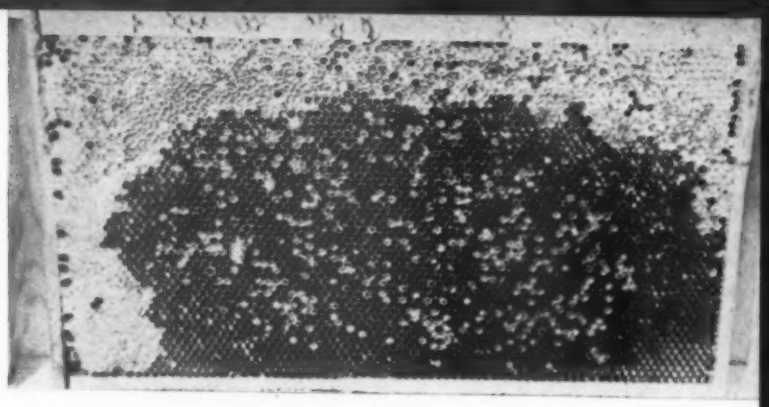


Fig. 4. Typical comb of A.F.B. as it developed in check colonies following inoculation.

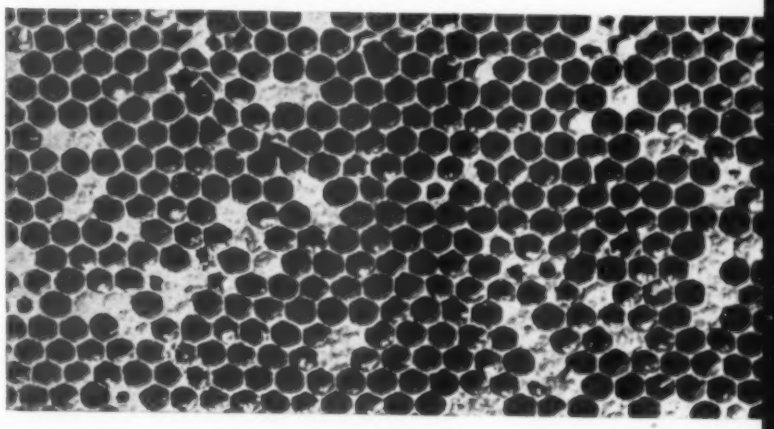


Fig. 5. Closer view of same comb (fig. 4) from opposite side. Material like this was used for inoculating other colonies.

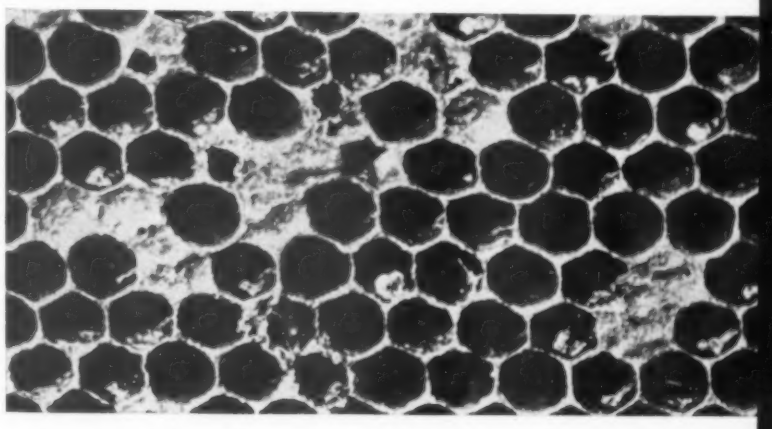


Fig. 6. Part of fig. 5 enlarged to show details. Note scales in open cells, sunken cappings, and cappings with ragged holes.

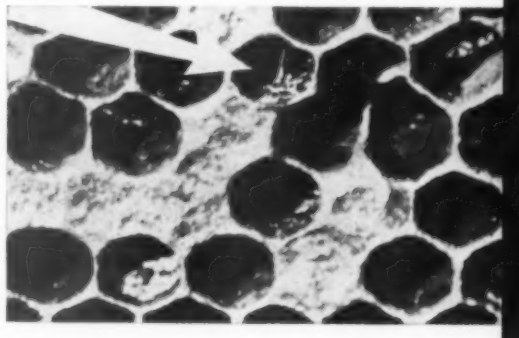


Fig. 7. Further details from fig. 5. Arrow marks dead pupa with tongue extended upward—considered a reliable symptom of A.F.B. when present.

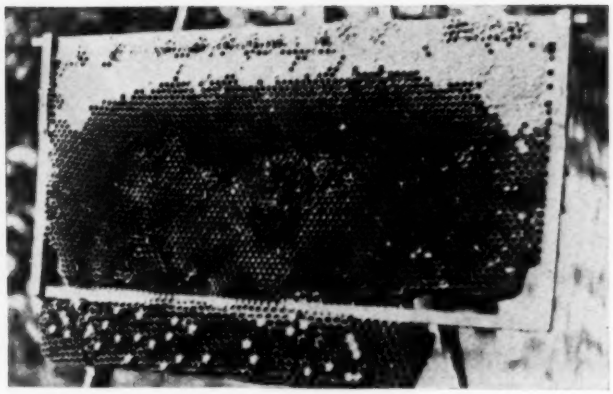


Fig. 8. Cell walls had been cut to the mid-rib over considerable areas.

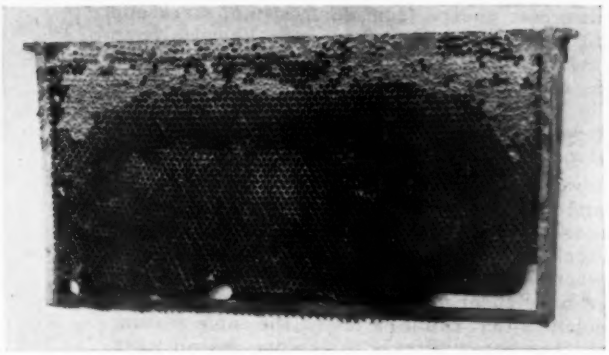


Fig. 9. Same as fig. 8, four days later.

sidered desirable, therefore to continue this practice throughout the second season; and since the check colonies inoculated the previous season had developed heavy infections of American foulbrood, combs from this source were ideal for making inoculations the second season. Fig. 4 shows a typical comb of this kind, while details are made apparent in figs. 5, 6 and 7. Note the scales in many of the open cells, the typical sunken appearance of the cappings and the characteristic holes torn in them by the bees. At the points of the arrow in fig. 7, may be distinguished one of the most dependable symptoms of American foulbrood—the protruding tongue of an individual that reached the pupal stage before death occurred. This symptom is to be found in only a small percentage of cases, but when present may be considered practically infallible.

The nuclei headed by queens of the second generation of resistant stock built up rapidly into normal colonies and on June 25, were inoculated as described above. Of 27 inoculated, nine cleaned up all symptoms of the disease before the end of the season, and thereby brought us to our second major objective by demonstrating that **the factor for resistance can be transmitted to offspring by resistant parents.**

Reactions Toward Inoculation Comb.

A year ago it was reported that wide variations were observed in the way different colonies reacted toward the inoculation rectangles containing American foulbrood. Whether this behavior has any great significance remains to be determined, but it has been looked upon as a possible index to the propensity of a colony to clean up the disease. At any rate it is one of the most striking reactions so far observed in connection with this investigation, so we have continued to record data on it.

It may be recalled that last year colonies were classified into three fairly distinct groups, according to their behavior towards inoculation rectangles, as follows: Group I—Colonies that accepted the inoculation rectangle with little alteration of the cell structure. Group II—Colonies that tore down the cell walls but did not remove the entire inoculation rectangle. Group III—Colonies that completely removed the rectangle of foulbrood comb given for inoculation purposes.

All colonies (except check colonies**) inoculated during the past two seasons, have been classified into the three groups defined above and may be tabulated as follows:

Groups	I.	II.	III.
Distribution of colonies			
1935 Inoculations	11 (5)†	10 (3)	4 (4)
1936 Inoculations	14 (5)	14 (7)	6 (2)
Totals	25 (10)	24 (10)	10 (6)
Disease-free colonies as percentage of totals	40	42	60

†Apparently disease-free by fall of 1936.

Figures in parenthesis indicate the number of colonies which had eliminated the disease by the fall of 1936. Thus it will be observed that, whereas only seven colonies were reported clean at the close of the first season, five more from the same original lot inoculated in 1935 are now clean. Further details in this connection will be given farther on. Referring to the 1935 inoculations we find that all of the Group III colonies, five out of eleven of the Group I colonies, and three out of ten of the Group II colonies proved to be resistant.

Were we to consider the 1935 inoculations alone, we might conclude that colonies which entirely remove the inoculation insert are practically certain to clean up, that those merely cleaning out the cells without tearing them down stand the next best chance for recovery, and that those which tear down the cell walls and rebuild on the original base are least likely to recover. But the results of the 1936 inoculations give a very different picture in every group. Here we see that only two out of six colonies which entirely removed the inoculation rectangle had cleaned up by the end of the season, whereas those which tore down the cell walls and rebuilt on the original base made a better showing than did those which cleaned out the cells without tearing them down. Totaling results to date, we find that the percentage of recovery for Groups I, II and III are 40, 42 and 60, respectively. Thus at the end of two seasons, Group III leads in percentage of cases which recovered. However, far more data will be required before any definite correlation can be established between the reaction of a colony towards the inoculation rectangle and its chances for recovery from the disease.

**Tabulation given last year included check colonies.

Case Histories.

It is believed that certain case histories may be of interest here. As a beginning let us take notice of two colonies whose histories had similar beginnings but different endings. Both queens were of the second generation of resistant stock and mated to brothers. As to their reactions toward the inoculation rectangle, both were classified as Group II. Disease developed in them at approximately the same time and rate. Neither appeared to make any effort to get rid of the foul material until more than a hundred cells had accumulated in each. Then both started to clean up. In one case the disease was reduced to six cells within 9 days and to zero in less than 30

days, with no recurrence during another 30 day period which brought the season to a close. The elimination of diseased material was accomplished with little or no tearing down of cell walls. In the other case the colony was not examined again until 17 days after recording the presence of more than 100 cells of disease, when it was found that drastic measures had been instituted. Cell walls had been cut to the mid-rib over considerable areas on both sides of two combs, and only three cells of foulbrood could be found in the hive. At the preceding examination both of these combs had been occupied by brood, some of it diseased. Fig. 8 shows one side of one of these combs and fig. 9 shows it as it appeared four days later. Notice that the tearing down had been extended, that considerable reconstruction had been accomplished, and that new wax had been used for much of the rebuilding, as shown by the whiteness of the cells in several regions. But in spite of such a strenuous effort to clean up, the colony was a candidate for the bonfire six weeks later. The principal difference in the two cases seemingly was that supersedure occurred in the latter instance.

This case is interesting for three reasons: first, because the behavior exhibited certainly is not common in colonies of ordinary, non-resistant stock when disease fouls their combs; second, because supersedure occurred simultaneously with the clean-up attempt; and third, because eventually the colony succumbed to the disease. We cannot be sure, of course, that the colony possessed resistance prior to supersedure, but its behavior and the progress made against the disease for a time might be considered indicative. The absence of young brood for a week or more at this period probably was advantageous for the clean-up, but could not make up for the lack of resistance in the progeny of the supersedure queen.

Among the colonies inoculated in 1936, several developed only a few cells of disease and in a couple of cases, no disease at all was discovered. So to test the matter further, it was decided to give six of these colonies a much more severe test. This was done by inserting, in the midst of each brood nest, a full depth Modified Dadant brood comb literally rotten with American foulbrood.

Frequent examinations revealed that all six colonies made considerable progress in removing diseased material from the foul combs given, but some were slower than others about starting clean-up measures and perhaps less thorough. Two in particular made especially noteworthy progress, but at the close of the season there was much less disease in one than in the other. Only the one that made the best showing will be described. Figs. 10, 11 and 12 show the condition of the comb as given to this colony. Figs. 13, 14 and 15 show the very same comb as it appeared seven days later, when only traces of scales could be found. In fig. 16, notice that cells were torn down over a considerable area in the lower right-hand quarter of the comb. Figs. 16, 17 and 18 again show the same side of the same comb 45 days after it was placed in this colony. At this time, only five cells of dead brood could be discovered in the entire comb, while numerous cells, selected at ran-

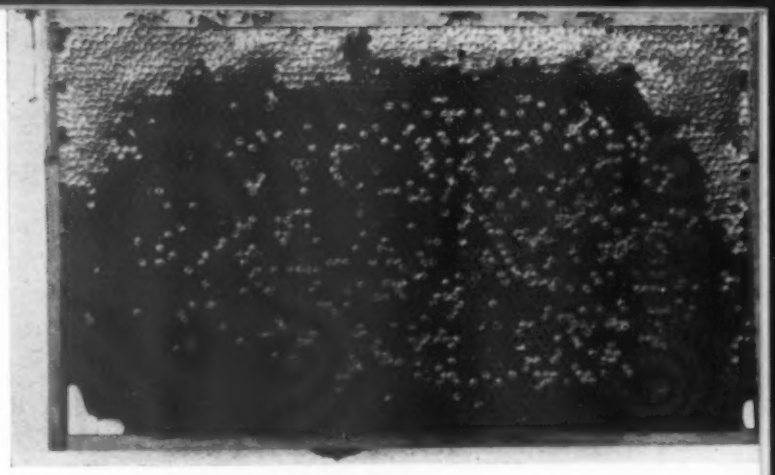


Fig. 10. Comb "rotten" with A.F.B. as placed in midst of brood nest of a colony which showed no disease during a period of 54 days following an inoculation by the regular method

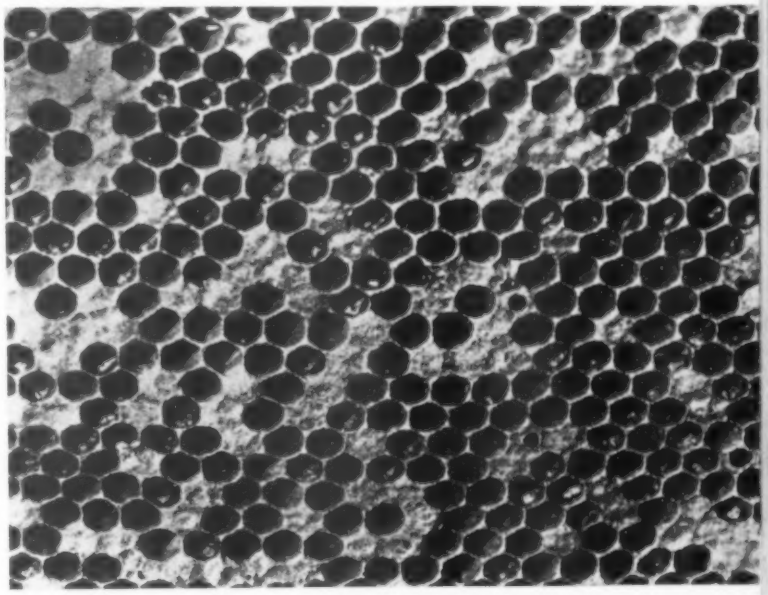


Fig. 11. Closer view of same comb (fig. 10) from opposite side.

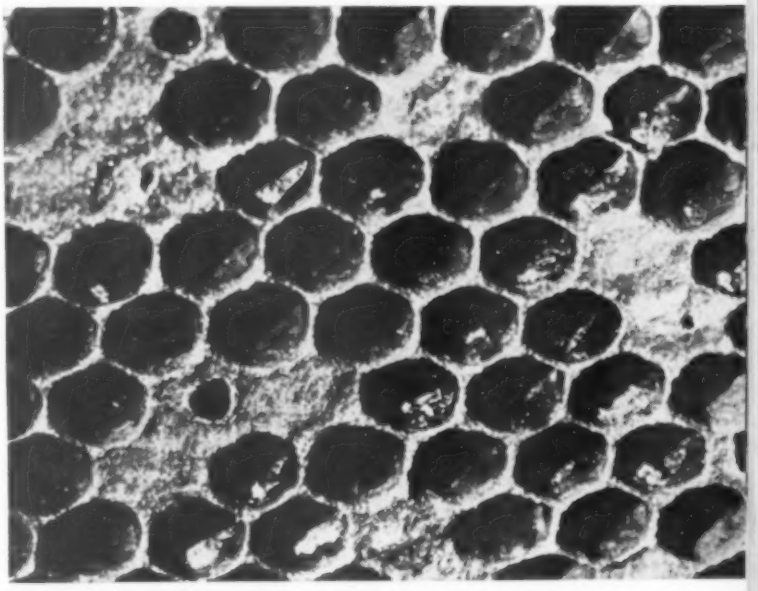


Fig. 12. Part of fig. 11 enlarged to show details..

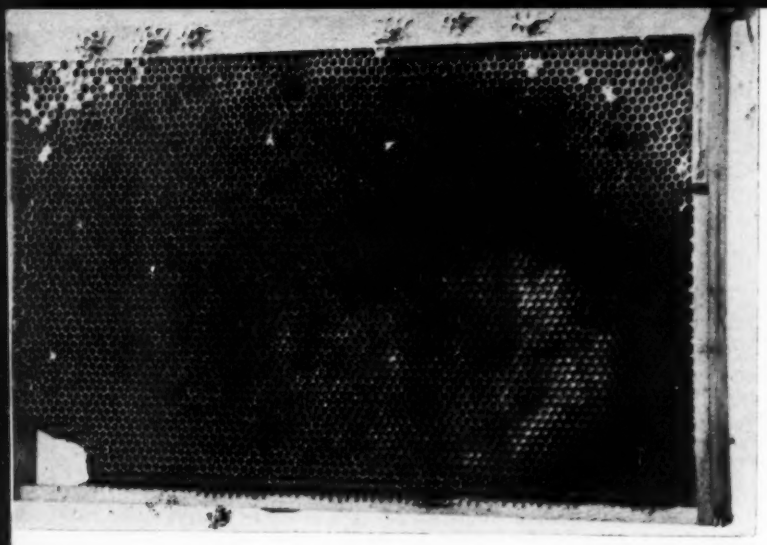


Fig. 13. Same as fig. 10, seven days later.

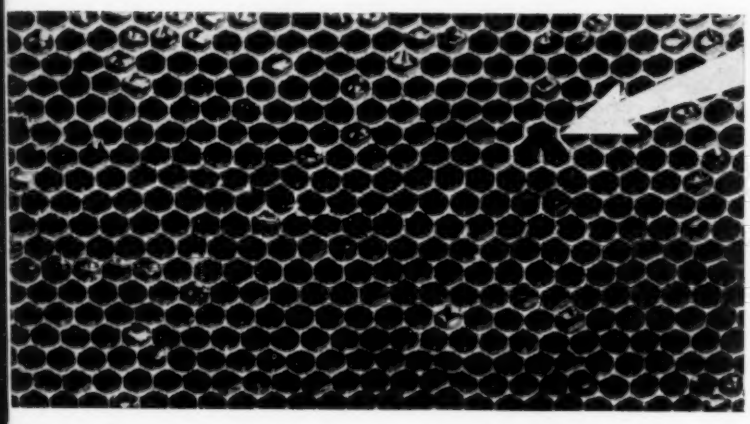


Fig. 14. Closer view of same (fig. 13). Nectar is to be seen in several dozen cells. Arrow marks clover-leaf pattern resulting when bees tear out the floor of a single cell to remove a scale of A.F.B.

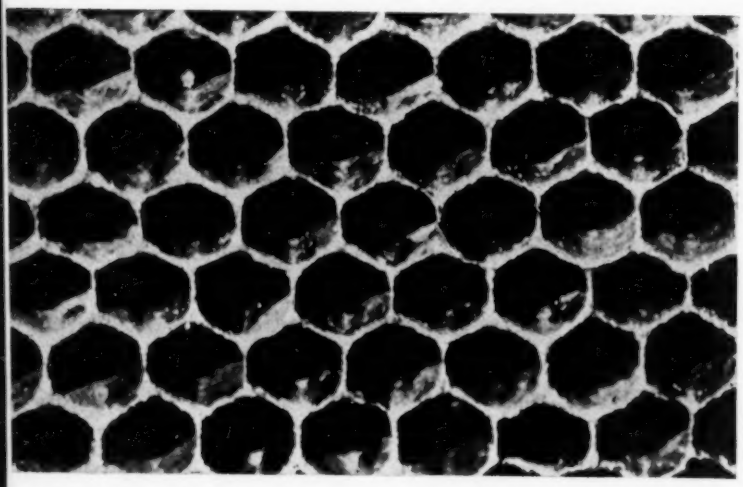


Fig. 15. Part of fig. 14 enlarged to show that few traces of scales remained after seven days.

dom, were uncapped only to reveal pearly-white, healthy-looking inmates.

Comparing figs. 10 and 13, one observes that the bees removed not only the dead brood from this comb but also the honey. While it is not know what was done with this honey, it seems reasonable to assume that a part of it was fed to the brood and that more or less was stored in various parts of the brood nest. This would account for the fact that diseased larvae soon showed up plentifully in all parts of the brood nest. Three dead larvae were seen on the ninth day, and by the eighteenth day the colony was described in our records as, "rotten—looks hopeless." This condition continued for about three weeks when it was recorded that the amount of disease present had been materially reduced. By the forty-fifth day, when the photographs for figs 16, 17 and 18 were taken, notable progress had been made, although considerable disease was still present in several combs.

The astonishing feature of this situation was that the very comb which had been so filled with disease when given 45 days previously, now held hundreds of healthy larvae and pupae in the identical cells formerly occupied by American foulbrood. Therefore, regardless of whether or not this colony ever completely eradicates the infection, it has already **demonstrated unusual ability to resist American foulbrood.**

Results:

Inoculations —1935—	Colonies	Disease-free by Fall '35	Fall '36
Checks	6	0	0
Presumably resistant	25	7 (28%)	12 (48%)
—1936—			
Checks	2		0
Presumably resistant			
Second generation	27		9(33-1/3%)
Other sources	7		5 (71%)
Totals	34		14
—Totals 1935 & '36—			
Checks	8		0
Presumable resistant	59		26 (44%)

In the accompanying tabulation we present a summary of results of inoculations during the two seasons. Of the 25 presumably resistant colonies inoculated in 1935, seven, or 28 per cent, were reported as having cleaned up by the end of that season. Others had shown substantial progress against the disease, but only those which had eradicated every symptom were reported as clean. By the following spring several more were free from disease, and by the close of the second season, five more had rid themselves of the disease, bringing the total to 12, or 48 per cent, of those inoculated in 1935.

It is a noteworthy fact that six of the seven reported clean at the end of the first season are still clean, notwithstanding the fact that supersedure has occurred in every one of them. It is significant also that disease reappeared in the seventh only after a swarm had issued. It is probable that the young queen either failed to inherit the factor for resistance or that she mated with a drone from susceptible stock. The swarm did not develop foulbrood. Its original queen has since been superseded, but the colony has remained disease-free.

In only one other instance, so far, has the disease been found in a colony after it was considered to have recovered. A single cell of American foulbrood was found in this colony on two different occasions. Another item worthy of mention is that one of them was a queen cell, for queen cells are not commonly attacked by American foulbrood.

With reference to the 1936 inoculations, we find that by fall nine out of twenty-seven of the second generation colonies recovered, while five out of seven from miscellaneous sources cleaned up. On a percentage basis, the colonies from miscellaneous sources made twice as good a showing as did the second generation colonies. It should be noted, however, that the colonies from miscellaneous sources comprised a highly selected group, and that even such a difference as is indicated may not be significant, because of the small numbers involved. When these two groups are taken together, we find that 41 per cent of the 34 presumably resistant colonies eliminated the disease by the close of the season. This figure is higher by 13 per cent than the results obtained from the 1935 inoculations at the end of the first season. While it is **not anticipated** that this 41 per cent will be increased by an additional 20 per cent during the second season, as was the case with the 1935 inoculations, we have reason to expect some additions during the second season.

It might be thought that there should be more check colonies, but the sole function of the "checks" is to demonstrate the potency of the dosage; and when we stop to consider that more than half of the supposedly resistant colonies regularly succumb to the infection, we discover that we have a superabundance of "checks."

If the results obtained during the two seasons are combined, we find that of the 59 presumably resistant colonies subjected to inoculation, 26 in all, or 44 per cent, have recovered to date, whereas all check colonies have succumbed to the infection.

There is a wide-spread opinion that the Italian race is highly susceptible to American foulbrood. This may be true of many strains, but among the colonies we have found resistant, Italians are fully as well represented as Caucasians and Carniolans. It is evident, therefore, that no one race has a "corner" on resistance to American foulbrood.

Fears have been expressed that, in the development of a disease-resistant strain, such desirable characters as gentleness, hardiness and high production might be sacrificed. Such a possibility has been recognized from the first and is being guarded against. Already the queen of one highly resistant colony has been eliminated because of the viciousness of her bees. As yet our resistant stock has not been put to any special test for either hardiness or production, but general observations indicate no noticeable deficiency with respect to either.

The principal results for the seasons may be summed up as follows: (1) Almost half of the presumably resistant colonies tested have rid themselves of all symptoms of American foulbrood. (2) One-third of the second generation colonies tested have, likewise, eliminated all symptoms of this disease.

(Please turn to page 34)

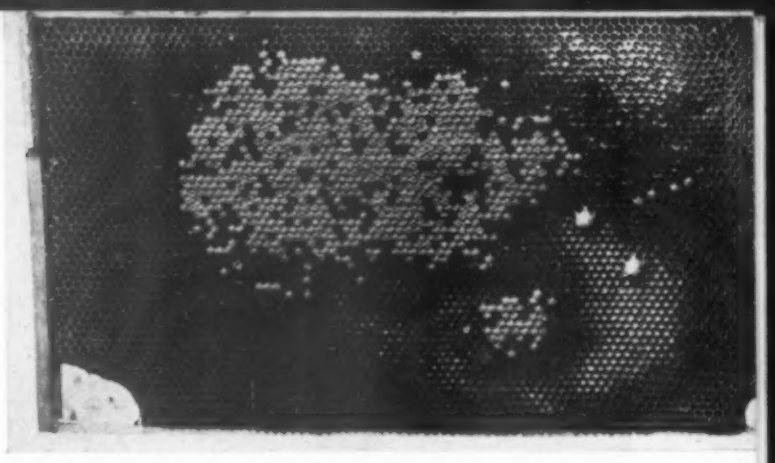


Fig. 16. Same side of identical comb shown in figs. 10 and 13, taken 45 days after comb was placed in brood nest.

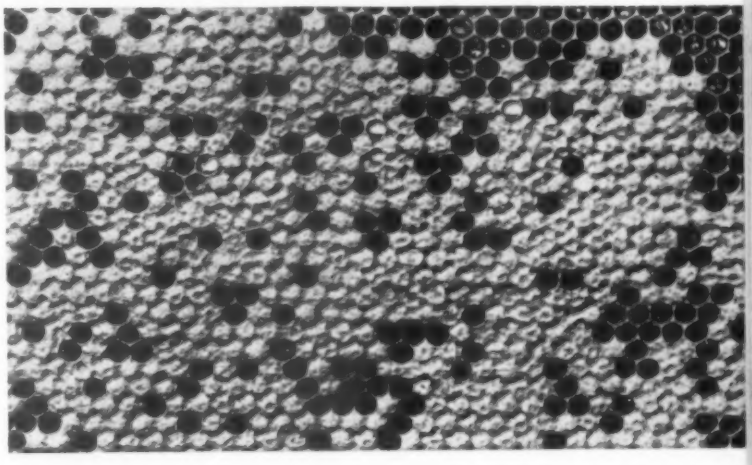


Fig. 17. Closer view of same (fig. 16).

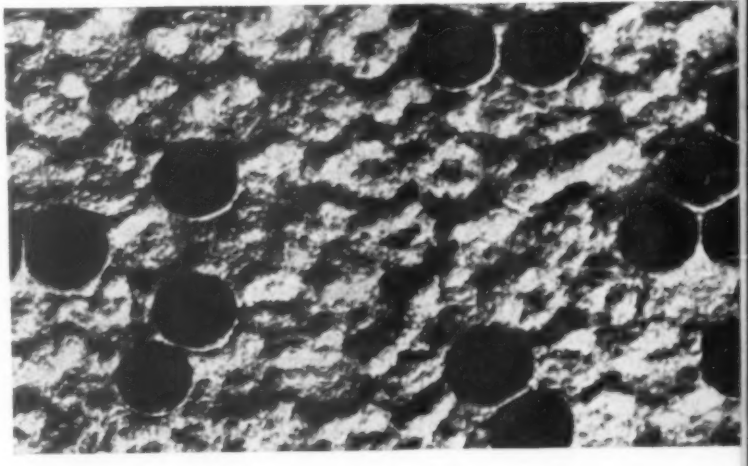


Fig. 18. Part of fig. 17 enlarged to show healthy appearance of brood in identical cells previously occupied by A.F.B.

A part of the convention group at San Antonio. Photograph taken in front of the h

San Antonio Conference Report

By M. G. Dadant.

IN the shadow of the historic Alamo and across the street from the Crockett Hotel, named after one of its heroic martyrs, occurred from November 21-25 the annual joint meeting of the American Honey Institute, American Honey Producers' League, The Southern Conference, National Association of Bee Inspectors and Bee Breeders and Queen Shippers, together with their Control Committee.

Thirty states were represented as well as the province of Saskatchewan in Canada, and Bulgaria in Europe. At least two other foreign representatives had to turn back since the seaman's strike did not allow their boats to sail. Over four hundred beekeepers were there, including eighteen inspectors, seventeen educators, and dozens of breeders, producers, supply dealers, officers of organizations with wives and ladies, making one of the finest meetings we have ever attended.

It is impossible to cover the meeting completely, since one would have had to be in several places at one time to get all that was going on. The hotel lobby was always crowded with groups visiting and exchanging ideas, looking over bee equipment in action, or admiring and tasting the wonderful exhibit of world honeys so painstakingly gathered by the efficient secretary of the League, Miss Arlene Weidenkopf.

A contest display of honey-made products was on another floor of the building; conference rooms all over the building; with the main program on the sixth floor.

And Texas had her folks there to see that the meeting went off in good style; that various groups might visit the Alamo missions, flying field, army fort and other points of interest. Burleson, Le Stourgeon, Parks, Heard, Weaver, and a score of other prominent Texans did the honors in a way that made the time pass without a hitch.

The Southern Conference.

The first day, general meetings were under the auspices of the Southern States Conference with Dr. F. L. Thomas presiding. Highlight addresses were by Dr. Warren Whitcomb, of the Southern Field Station; F. E. Todd, of the Pacific Coast Field Station; O. W. Park, of the Iowa Experiment Station; and Harold J. Clay, of the Market News Service.

Dr. Warren Whitcomb—Problems of the Southern Shippers. Organization is needed, though not necessarily close knit one. An orderly system of marketing is imperative. The day is passing when breeders will accept more orders than they can fill, though due allowance should be made by the northern buyer for weather conditions which delay shipments. Breeders are fast learning something of the cost of production which makes for stability of prices and products. Bee shipping has come in for close study in cooperation with Express Companies, so losses are being cut. A standard package has been commended, but is not compulsory, breeders being shown the desirability of a set standard to cut losses, so many obsolete packages, sizes and shapes, have been abandoned. Express Companies will cooperate in eliminating others should they be found to cause unnecessary losses.

in front of the historic Alamo, with the Crockett hotel across the street in the background.

Work towards finding the cause of queen supersedure in packages has not progressed sufficiently to give any statement about it so far. Genetic studies, queen rearing methods, grafting, cell building, etc., are being carried on at the southern station.

F. E. Todd, Pacific Coast Field Station—The Physiological and Chemical Properties of Beeswax. Western beeswax has been studied chiefly. Bees were fed sugar syrup in cages and honey in the hives. Results show that pure beeswax is uniform and white in color. Sixty-five samples of beeswax from different sources gave a great variety, especially in acid content, probably due to impurities caused within the hive and by the beekeeper. This varying acidity makes impossible the use of all California waxes in the cosmetic trade. There is a marked difference in the bleaching of them. Aluminum, nickel, stainless steel and wood make the best containers in which to heat and handle beeswax.

Harold J. Clay, Market News Service—How to Use the Market Reports to Advantage. The market news service is now nearly 20 years old. Yet there are hardly 3,000 beekeepers who use the reports. The active cooperation of all beekeepers in making the report more complete is urgently solicited. Already, there are 600 reporters and it is desirable to add to them wherever it can help make the reports more accurate and representative. Already the honey and beeswax news service is the most complete of all the agricultural news service in Washington.

Dr. O. W. Park, Iowa Experiment Station, reported the second season's work at the sub-station at Atlantic, Iowa, in the experiment on disease resistance. A complete article covering Dr. Park's report is to be found on page 20 in this issue.

Officers elected for the Southern States Beekeeping Conference for the coming year were E. S. Prevost, Anderson, South Carolina, President; A. V. Dowling, Valdosta, Georgia, Secretary. Vice Presidents selected: Louisiana, G. W. Bohne; Oklahoma, R. L. Blackwell; Texas, H. B. Parks; Arizona, W. C. Collier; Alabama, Paul Cutts; Mississippi, M. S. Fortune; Georgia, G. G. Puett; Florida, L. M. Lewis; North Carolina, F. B. Meacham; Virginia, T. C. Asher; Tennessee, J. Allison; South Carolina, L. W. Alford.

American Honey Institute Day.

Tuesday was American Honey Institute day, with President Kelty presiding.

Dr. R. E. Lothrop, Bureau of Chemistry—The Ability of Honey to Retain Moisture and Practical Applications to Promote Greater Use of Honey.

Stress has been made on flavor and energy value by potential honey users and suggestions made that certain types of honey may be suited for specific purposes. This is especially desirable for those honeys not suited for table use.

Hygroscopicity in honey is its ability to retain moisture. Care should be exercised in storing, because in low and moist temperatures honey will absorb moisture. Why is this? All saccharine compounds tend to do so. Levulose is more hygroscopic than other sugars. Browne shows that honey is more hygroscopic than sugar or levulose. Hygroscopicity depends on the composition of honey from the standpoint of sugar and small non-sugar content.

Various sugars, in an experiment, were compared with honey under controlled humidity conditions. Honey at 68 degrees in its natural state at a humidity of 60%, neither lost nor absorbed moisture. Baking tests were conducted to determine whether honey retained its moisture when in the baked state. Loaves of bread were placed under controlled temperature and moisture, breads to 68 degrees, 60%, and cakes to 68 degrees, 50%. Buckwheat honey showed the least loss of moisture. The results were more pronounced in the cakes than in the breads on account of the heavier sugar content. The sugar content of breads is from 3 to 6 per cent. Sugar is of source of food for yeasts, a source of sweetness and a source of color for crust.

Some of the uses for honey which should be studied are:

1. In tobacco, to prevent drying. The cigarette makers are reported to use four million pounds of maple sugar a year for this purpose.
2. In candy, for flavor and flavor

retention, carmelization.

3. In ice cream and ices, for flavor and texture influence.

4. In brewing, for rate and character of ferment.

5. In wines, for flavor and ability to carry flavor through fermentation, and as an aid to fermentation.

6. In vinegar, for similar reasons.

More work is needed and a more thorough survey. Chemical staffs are needed as in other sweet manufacturing. Each honey should be placed where it can be used to best advantage.

T. E. Burleson, Sales Manager, T. W. Burleson & Son—The Demands Made by Honey Buyers. We will not report it here, as we have his complete paper, and expect to reproduce it in a near issue.

Mrs. M. F. Jensen of the American Honey Institute gave a short history of the Institute since its inception, showing that after the plans are laid for a definite program of honey publicity, **it takes three years to bring that plan to fruition.** Contacts made with commercial organizations for the use and recommendation of honey in connection with their own products cannot be expected to show results inside of the three-year period, and naturally many contacts are relatively fruitless.

Professor Wilson and Miss Willa Goodman expressed the feeling that the work the Institute can do is limited only by the amount of money available for its work, and this, of course, is dependent upon the support of the beekeepers. Every beekeeper should support the Institute on the basis of one dollar membership, and one dollar for each ton of honey produced each year.

Ruth Cooper, Drapey-Rocey-Locke-Dawson Advertisers, Inc., Dallas, Texas—What Advertising Is Doing for Various Food Associations. We have Miss Cooper's full paper and will reproduce it in a near issue.

League Day.

With President Thos. C. Burleson presiding, Wednesday was given over to the American Honey Producers' League.

W. E. Anderson—The Interstate Movement of Bees. He stressed the point that Louisiana as well as other southern states welcome incoming beekeepers, if they come in with the idea of locating permanently. Bee inspection, however, demands that all newcomers shall be made to conform with regulations to maintain inspection at its highest efficiency. Fly-by-night beekeeping cannot be tolerated because of its possible effect on the queen and package bee industry.

E. R. Root—The Responsibility of the South in Relation to the Package Bee Industry. He traced the growth of the industry from its earliest days to 1936 when thousands of packages and queens moved every day during the shipping season. He stressed the value of standardization, prompt shipments and absolute satisfaction, and expressed the prediction that we are not yet seeing the package bee industry except in its infancy.

Two of the famous at the Conference—Guy Le Stourgeon, editor, "The Beekeepers' Item"; and E. R. Root of "Gleanings in Bee Culture."

Jas. I. Hambleton, Bee Culture Laboratory, discussed the plans of the various cooperating agencies in the problem of developing a strain of bees resistant to American Foulbrood.

J. W. Newton of the committee on beeswax tariffs reported it was the feeling of the committee that a discussion of beeswax tariffs be dropped. A tariff on beeswax would place that commodity at a distinct disadvantage over other waxes for general commercial purposes unless such other imported waxes were also subjected to a duty.

Thos. Burleson, the retiring president, was unanimously elected to honorary life membership. Officers for the ensuing year were Chas. A. Reece, Ohio State Bee Inspector, President; Geo. J. Abrams of College Park, Maryland, as Secretary. Directors: T. W. Burleson; E. J. Dyce; M. S. Stone; Ed. Brown; E. J. Anderson.

Mr. Humbert, College Station, gave some facts in a genetic study of the honeybee, pointing out how necessary it will be in a long range problem in bee breeding to fix certain qualities in any strain of the honeybee.

Board of Directors American Honey Institute

The meeting of the Board of Directors was called to order by vice-chairman E. R. Root and the following Directors were present—T. W. Burleson, Thos. Atchison, E. G. Brown, M. S. Stone, Geo. Lotz, L. C. Dadant. R. H. Kelty, president of the Institute and H. F. Wilson, chairman of the Finance Committee, were also present.

Prof. H. F. Wilson, chairman of the Finance Committee gave a full verbal report of the present set-up of the finances of the American Honey Institute, also gave to the Directors all the information necessary to show them the manner in which the business affairs of the Institute are now being conducted.

The Finance Report shows that the amount received from subscriptions from January 1, 1936, to November 16, amounted to $6,667.39. The assetts of the Institute including all printed matter on hand or distribution, stationery, office supplies, etc., amounted to $886.06. Actual cash on hand on November 16, $86.12.

Prof. Wilson also reported that funds were beginning to come in again and that there was a good prospect of returning to the publishing fund and to the reserve fund the sums that had previously been borrowed from them to tide the Institute over a difficult period.

The matter of a budget was deferred until the first of the year, at which time prospects for the coming season would be better measured. The budget would then be submitted to the Board of Directors for their approval.

It was recommended and passed that membership be on the basis of $1.00 per year with an additional $1.00 per ton for all honey produced.

Prof. Wilson also reported that through the cooperation of the University of Wisconsin, a honey laboratory had been established with a complete set-up for making chemical analyses of honey and the necessary equipment for doing all the cooking in connection with the testing of honey recipes.

The following officers were elected: President, R. H. Kelty; Secretary, L. C. Dadant; Treasurer, Willah Goodman. Executive Committee: R. H. Kelty, H. F. Wilson, G. C. Lewis. Finance Committee: H. F. Wilson, Chairman; T. Atchison, A. G. Woodman, E. T. Cary, H. M. Krebs. Board of Directors: 3 year term, E. R. Root, T. W. Burleson. 2 year term, L. C. Dadant, G. C. Lewis. 1 year term, T. Atchison, M. S. Stone. 1 year term, E. G. Brown, E. T. Cary, George Lotz.

The Board of Directors then elected the following officers: G. C. Lewis, Chairman; E. R. Root, Vice-Chairman and L. C. Dadant, Secretary.

The following Advisory Committee was elected: Lewis Parks, Chairman. Miss Mary I. Barber, Kellogg's, Battle Creek, Michigan; Miss Jean Guth-

rie, Better Homes & Gardens; Miss Genevieve Callahan, Sunset Magazine; Mrs. Marjorie Child Husted, General Mills; Mrs. Caroline B. King, Country Gentleman; Mrs. Luella Mortensen, Wisconsin; Miss Dr. P. Mabel Nelson, Ames, Iowa; Lewis Parks, Chairman, G. B. Lewis Company; Miss Joan Rock, Hutchinson Adv. Agency; Miss Bess Rowe, Farmer's Wife; Miss Dorothy Shank, American Stove Company; Miss Annette Snapper, Premier-Pabst Company; Mr. L. B. Williams, California Dried Fruit Institute; Mrs. Malitta Fischer Jensen, American Honey Institute; Mr. W. F. Straub, Straub Laboratories, Chicago, Illinois.

A full report of the work of the Institute including its financial statement and affairs will be published in the annual report about January 10. Every member of the Institute will get a copy. Beekeepers who wish to have this information should become members of the Institute if they have not already paid their dues.

Meeting of the Queen Breeders and Package Shippers

By J. M. Robinson, Director, Control Committee.

This was an open meeting in the Crockett Hotel, Monday, November 23. For two hours, a discussion of the various phases of the Bee Marketing Agreement occupied the attention of the meeting. Package bee and queen shippers expressed the desire to continue the agreement another year. Representative honey producers also expressed a desire for the continuance of the Marketing Agreement. They were particularly concerned with the guarantee in the Bee Marketing Agreement of the weight of packages and quality of queens. These two facts have developed more confidence among the honey producers than any other in the whole Marketing Agreement. It was pointed out that it is imperative to receive a good weight package and a good quality queen if the colony developed and produced honey between the periods of June 1 through September, particularly in Canada. It is very important that bees arrive in good condition and that packages and queens be up to standard.

Mr. J. H. Butler of the American Railway Express Company pointed out some of the problems of transporting live bees and assured the shippers that the Express Companies would do their best in 1937 to deliver the bees in good condition. A vote was unanimous on the motion requesting the Control Committee to continue the Marketing Agreement for 1937, without any changes. Therefore, the prices and assessments under this agreement will be as they were in 1936, and will continue through the year, 1937, without change.

Apiary Inspectors of America.

Probably the most comprehensive group of inspectors ever assembled. The meeting was under the leadership of Robert E. Foster, of Florida.

The group went on record unanimously as favoring the uniformity of state bee laws and appointed a committee to work out such a law. Efforts are also to be made to have model laws submitted and passed by the states now without laws to minimize the dangers of shipments from these states to others.

The possibilities of a national disease law and of national supervision of inspection brought the feeling that such a law might regulate the interstate movement of colonies and of used equipment better than at present, especially with a number of states that do not have adequate inspection.

R. L. Parker of Kansas presented three forms of by-laws and, under motion carried, copies will be sent to all inspectors for consideration at the next annual meeting.

Jas. I. Hambleton discussed para-foulbrood which has existed for several years, particularly in Georgia and Florida. Para-foulbrood may be mistaken for European or American foulbrood. Diagnosis is easier in the apiary than in the laboratory, however, Morphologically, the difference is largely one of size. It spreads rapidly like American. The odor is distinct; if America foulbrood is foul, para-foulbrood is rotten.

Where the diagnosis is certain, almost the same treatment may be used as in European, requeening of the colony, after a period of queenlessness. The great difficulty is in the diagnosis, since the characteristics are much the same as in both European and American. Black and Golden bees are the most susceptible.

Mr. Todd suggested that the disease may in part be caused by a nutritional deficiency such as shortage of pollen at certain seasons.

The inspectors passed resolutions commending Dr. Park and his coworkers for their progress with disease resistance.

Robert E. Foster was elected President for the coming year, with James E. Starkey of Indiana as Secretary. The next meeting will be with the League at Washington, D. C., in 1937.

First National Ladies Auxiliary

Approximately eighty ladies were in attendance. Most of them expressed a desire to organize a Ladies Auxiliary, the purpose of which would be to plan and build programs of special interest at national conventions for the ladies who might be attending. Mrs. Jensen of American Honey Institute explained the Auxiliary Development as sponsored by American Honey Institute and summarized the value of such work in states where it had been carried on.

The auxiliary work was started in 1929 by American Honey Institute. Not until 1930 however was the first auxiliary organized and it was developed in Illinois. California followed thereafter and while these states did not get the ladies out in any great numbers at their meetings the first two years, they did succeed in getting many of the beekeepers' wives interested in the use of honey.

After three years of intensive work by the Institute in explaining to beekeepers and their wives who may have attended state meetings or read the bee journals, the Institute representatives were able to have at the beginning of 1936 the following definite auxiliary set-ups:

California, Iowa, Wisconsin, Washington, Idaho, Michigan, Utah, Oregon, Illinois, New York.

These states have state chairman and secretary. The ladies are becoming more interested and are making a greater effort to come to the meetings. They are teaching others to **enjoy** the use of honey in the home after having first learned how to **enjoy** it in their own homes. They are fast realizing that they have a definite part in the success of the beekeeping industry and that they can have a good time assisting in the obtaining of that success.

A National Auxiliary was organized at San Antonio, November 23, 1936. All of the ladies favored such a program, and at a round table discussion agreed to make an effort to attend the 1937 national meeting and participate in a special program for the ladies. The officers elected at this meeting were:

National Chairman — Mrs. Ethel Krebs, Sacramento, California. (Mrs. Krebs has been State Chairman of the California Auxiliary since its origin and writes a monthly column in Bees and Honey on the activity of her ladies. Her husband is State Apiary Inspector for California and this gives her an opportunity to make a number of meetings not otherwise possible.)

At the organization meeting of the National Auxiliary it was voted to hold open the privilege of becoming a charter member of the First Ladies Auxiliary until the 1937 convention in Washington, D. C.

The dues are 25 cents, this amount being thought necessary to take care of postal card notices. American Honey Institute will keep these ladies on their regular mailing list for special auxiliary releases during the year.

At the San Antonio meeting, twenty-nine ladies from seventeen states and Canada joined the organization. The states represented in this membership are: California,

(Please turn to page 45)

The Honeybee as Pollinator of Cultivated Blueberries

By F. R. Shaw, Instructor in Entomology and Beekeeping, and

J. Bailey, Assistant Research Professor of Pomology.

THE importance of honeybees as pollinators of cultivated blueberries has been questioned; it has been stated that because of their short tongues they could not reach the base of the flowers of some varieties of blueberries and for this reason did not attempt to gather pollen from blueberry flowers. Bumblebees on the other hand are regarded as especially valuable for blueberry pollination because of their long stiff tongues, relatively large numbers, and ability to work during weather unfavorable to other insects.

Several other kinds of insects act as pollinators of blueberries, but their relative importance is in doubt. Among these the two-winged flies **(Diptera)** and the wasps and bees **(Hymenoptera)** are most frequently observed. The importance of the solitary or sweat bees **(genera Halictus, Andrena,** and **Colletes)** has not been fully appreciated. There are authentic reports based upon the observations of a well-known and well-trained beekeeper that in some localities a good set of berries was obtained when most of the pollinating insects were solitary bees.

Since blueberries are newcomers among cultivated fruits, information concerning insect pollinators is meager. To throw further light on this question experiments were carried on at the Massachusetts Experiment Station during the past summer. A cage 5′x10′x10′ was placed over one bush each of the varieties Harding and Pioneer, and another of the same size over the varieties Pioneer and Grover. A branch of each variety was covered with cheesecloth to exclude the bees.

A nucleus hive, containing three frames of bees, emerging brood, and one frame of honey was placed in each cage just before blossoming. These were removed after blossoming ceased.

As is usually the case when bees are caged, they did not behave normally. Many flew to the top of the cage and remained there. However, the results indicate that enough of them visited the blossoms to make normal pollination possible.

When the berries were ripe, counts were made of the number of fruits set on the branches covered with cheesecloth and on comparable branches which had been exposed to the visits of bees. Results were as follows:

Variety	Number of Fruits Set	
	With Bees	Without Bees
Harding	42	0
Pioneer	16	0
Grover	36	0
Pioneer	32	3

It was also observed that the set of fruit on the bushes caged with the bees was as good as the set on bushes exposed to open pollination.

Since insects other than honeybees are undoubtedly of importance as pollinators of cultivated blueberries, collections of all insects visiting the blueberry plants were made at different hours of the day, from May 21 to May 26, in order to determine what kinds of insects visited the bushes and their relative abundance. Although not all of the insects collected have been identified, the most abundant kinds are listed as follows:

Bumblebees	
Bombus impotiens	23
Bombus plexplexus	45
Total	68

Solitary Bees	
Colletes	22
Halictus	20
Andrena	30
Total	72

Honeybees 56

Although the bumblebees and the solitary bees as groups each exceeded in number the honeybee, yet the honeybee is the most numerous single species found.

In conclusion it can be stated that:

1. The varieties of blueberries tested were practically self-sterile.

2. The honeybee can and does pollinate the flowers of the varieties of cultivated blueberries used.

3. Bumblebees, solitary bees, and honeybees are all important pollinators of cultivated blueberries. Which is the most important is uncertain.

Honey Makes a Hit

By C. M. Litteljohn,
Washington.

Honey at the fair often fails to score because of the colorless character of the exhibition and lack of showmanship — but at the Western Washington Fair each year—the big affair for Seattle, Tacoma, and all the cities and towns of the western half of the great honey state of the Pacific Northwest — honey is highlighted into a hit of the show, sometimes stealing the show so far as other exhibits are concerned.

Dramatized in many different ways —especially in the premium or award for appearance and originality in presenting or packaging—such honey furnishes maximum consumer appeal.

Showmanship is most effective at such displays, since the West Washington Fair does not go in for freaks and so-called "wonders," but sticks in dignified manner to the more sober facts and realities of agriculture, building up its honey section by inventiveness, resourcefulness and diversification.

Honey, not hooey, is what is offered at the exhibition that embodies the most important half of the Pacific coast state. It is one of the main factors in the great success of this outstanding Pacific Northwest show —a fair that throughout the recent depression went bigger than ever each year. Although it operated on a non-profit basis, the fair has reflected each year an attendance figure larger than the year before.

Another underlying reason for the solid success of this perennial undertaking, prepared for an entire year in advance and looked forward to each fall, is its lack of artificial ballyhoo and operation of a midway with carnival features and cheap, nickle and dime-catching devices and diversions inherent in many other fairs.

Outstanding among the honey exhibits at the last fair in Puyallup, the little community south of Seattle, where these grand fetes or fall festivals are held, between many light and dark amber products of bees of a thousand pastures from fireweed to clover, was the exhibit of brands of honey by the State Grange, representing a high diversity of such products.

This famous Western Washington Fair that embraces many honey-producing counties has been frequently described as one of the most successful fairs of the United States, being upheld as a model of operation for many fair superintendents and managers throughout the country.

Estes Park Hotel Serves Free Honey

Among the many "little" things to which she contributes the remarkable success of her hotel, Mrs. William Derby gives the serving of honey free with all meals a prominent place. Mrs. Derby, or Mother Derby as she is better known, is the genial proprietor of the Hupp Hotel, of Estes Park, Colorado.

"Nearly everyone likes honey," explained Mrs. Derby, "but few of them will pay ten or fifteen cents for a small serving. It occurred to me that free honey with all meals might attract and hold customers. At first I served it in small dishes, but these were a nuisance to my dishwashers so I bought a number of white china containers modeled in the form of an old-fashioned skep. The handle on top of the lid is modeled in the form of a honeybee, and there is a notch in the cover so that the spoon may remain in the dish when the cover is in place, the handle protruding through the notch. A "skep" of honey remains on all of the tables in the dining room along with the sugar bowl, salt and pepper shakers, and vinegar cruet. Honey is as much a part of the free service as are sugar and salt."

Mother Derby and the Hupp Hotel are as much a part of Estes Park as the snow-clad peaks for which this popular resort is famous. She caters not only to the thousands of ummer visitors, but has developed a headquarters for visiting National Park Service officials who have business in nearby Rocky Mountain National Park. Although serving free honey has increased her expense and her overhead because her visitors eat so much of the sweet, she maintains that this policy has also increased the clientele who always eat at the Hupp dining room when in Estes Park thus more than making up for the cost of the honey.

Mother Derby thinks that all hotels and restaurants would find the serving of free honey profitable, and that this sweet is just as much a part of the service as sugar and salt. Her only unfavorable comment on the policy, if adopted by all eating houses, is that beekeepers might not be able to keep up with the increased consumption.

Natt N. Dodge,
Arizona.

—ABJ—

Hawaiian Honey

While sugar is the largest and unquestionably the most important industry in the Territory of Hawaii, it is not the only island product shipped to sweet-toothed consumers in other parts of the United States. Mr. R. J. Elliott, associate marketing expert for the U. S. Bureau of Agriculture Economics, a subdivision of the Department of Agriculture, draws attention to the fact that approximately one million pounds of Hawaiian honey is sent annually to dealers on the mainland.

Loaned to the territorial government by the Department of Agriculture for the purpose of seeking ways to better markets for Hawaiian products, Mr. Elliott is in the midst of a task involving the establishment of standard grades of honey harvested from the mid-Pacific island bees. He states the honey, when graded, will command prices almost twice those obtained under the present practice of shipping all honey as it is gathered and sealing it as one grade. The present price is five and six cents a pound.

A virtue of graded honey is that it may be ordered by grade and number and the purchaser knows what he will get in color and content. The various grades are standard, registered in Washington and used throughout the United States. Under this system binding legal contracts may be made for the production and purchase of territorial honey; at present a dealer may declare a shipment upon arrival is not what he ordered and the producer has no recourse.

The majority of the honey produced in the Territory of Hawaii is harvested on Kauai, the Garden Isle.

—ABJ—

Winter Feeding Light Colonies of Bees

By Ben G. Davis,

Tennessee.

A colony of bees should have at least thirty-five pounds of honey to carry them through the winter, more if a very strong colony, so would suggest that even now all hives should be lifted, to determine the amount of stores they contain, and be fed according to their needs.

If you do not have the honey to feed, a good substitute, even better than poor honey such as aster, is a thick syrup made of two parts best granulated sugar, and one part of very hot water. Stir until dissolved. Do not cook.

Inexpensive feeders can be made of five-pound friction top cans. Punch about twenty holes in the top with a four penny nail. Punch to inside of can.

At this time of year, two of these cans will be enough to give at one time. About an hour, or less before time to feed, make the syrup, let it set until it becomes about mild warm, then fill cans, and you are ready to do the actual feeding. Have some thick papers cut the size of the hive, cut two holes about two inches in diameter; place the full cans over the holes, top side down; put on empty super. Do not feed too early. Usually the bees will remove the syrup during the night, if not too cold, but if for any reason they fail to do so, remove to the house and give the syrup to them the next night.

It is best to feed after all the bees are in for the night, for you want to avoid getting the bees started on a robbing spree. Keep on feeding until the bees have enough stores for the winter. Do not try to save on feeder cans. They are cheap, and above all do not use cans that have holes in them, for all your feed will run out.

Feed just as rapidly as possible for at this time of the year it may turn too cold to feed so get it done and off your mind right now.

You of course, understand that you are simply supplementing the feed they may have on hand, bringing them up by feeding to a total of around thirty-five pounds of stores per colony.

Never under any circumstances, buy honey to feed your bees, no matter where it comes from, for American foulbrood is so prevalent that you can ill afford to take a chance, besides good thick sugar syrup makes a good winter feed and is not so expensive.

The abundance of stores, good stores, honey or syrup for winter spells the difference between success and failure for next year.

Winter protection is the thing of utmost importance, and you should start early to make your arrangements. First get an abundance of old newspapers, and some good paper roofing. Spread the papers about a dozen in thickness over the hives and fold as though you were wrapping a package. Get the papers well down over the hives. Use small tacks to hold in place. Then put on paper roofing using thin strips to hold it in place, being sure to have the roofing paper come well down over the newspaper. This is an inexpensive and fairly successful way to protect your bees, and so save bees and honey, for the colder it gets the more of the stores are used.

With plenty of stores and some winter protection you will be surprised next spring at the condition of your colonies, so give both the feeding and the cheap protection a trial this winter.

Lives of Famous Beekeepers

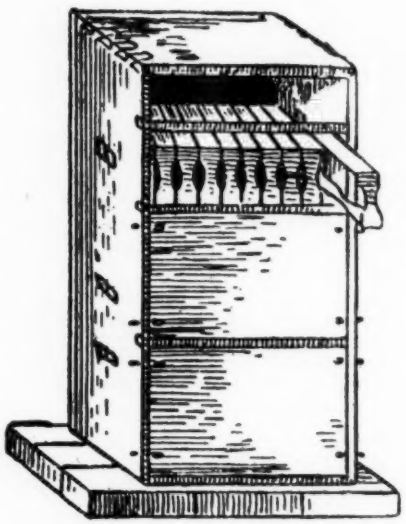
By Kent L. Pellett, Iowa.
*and Mykola Hajdak, Czechoslovakia**

PETER PROKOPOVYCH, 1775-1850.

FIVE hundred years ago the peasants of Ukraine in the south of old Russia were extensive beekeepers. Honey and wax were among the most important articles in the exports of Ukraine, to the west of Europe and to Moscow and Constantinople.

The town Lvov was the center of the western trade. A factory there extracted wax. The town controlled all the wax for export and placed on it the town seal as a guarantee of purity. In the year 1510 Lvov exported 15,760 stones† of wax and 707 large barrels of honey. And in other caravans honey and wax moved out of the town of Kyiv, going to the Russian city of Moscow and the Turkish city of Constantinople.

Such a zig-zag is the path of human progress, that after 1500, the peasants under durance forgot their bees and the commerce of Lvov and Kyiv in the sweet products of the hive dwindled. People, who, like the gods had imbided honey-made drinks, began to slake their thirst in the swill of the distilleries, and the demand from the west for beekeeping products fell off. The nobility found new ways of oppressing the poor. They placed so high a tax on the hive that soon the common people lost both the way and the will to keep bees. This put an end to popular beekeeping which had been a source of wealth to the whole country. Henceforth only the landowners and the monasteries knew the hum of bees and the taste of honey. Drudgery became the daily lot of the common people.

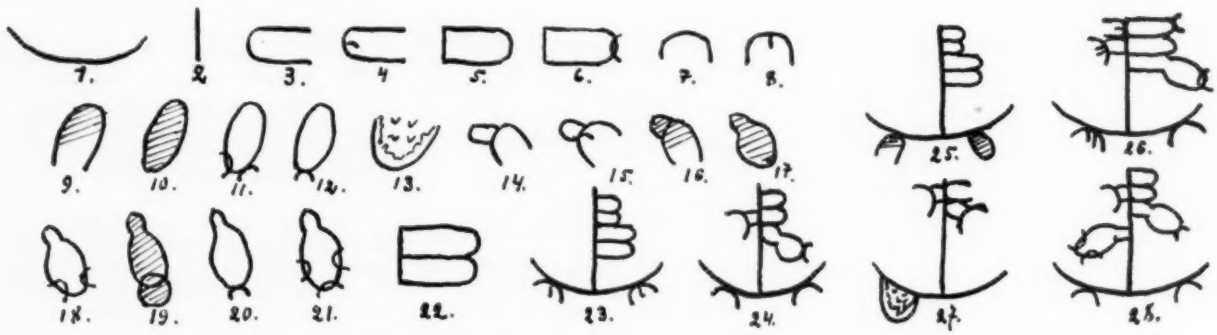


Prokopovych hive. A box with division boards. The combs have lath supports. The hive was also provided with a crude queen excluder, invented long before Hanneman.

In such difficult times there grew up a man who was to become the father of modern beekeeping in that part of Europe. He was Peter Prokopovych, who sacrificed his whole life to the improvement of popular beekeeping. Prokopovych was born June 29, 1775, in the village Mychenky in the Chernyhiv government, in Ukraine, the son of a Ukrainian clergyman, of an old Cossack family. He studied at the Mohylan academy in Kyiv, learning six foreign languages. After finishing his studies he

*The material for this life of Peter Prokopovych is furnished by Mykola Hajdak, who at the time it was prepared was working at the Czechoslovakian Research Institute for Beekeeping. Much of the wording is also that of Hajdak. Mr. Hajdak was born in the Ukraine. Following the Russian revolution he was in the Ukrainian army that was defeated by the Russian bolsheviks in the attempt to win freedom for the republic of Ukraine. It is believed this is the first time material concerning the great leader, Prokopovych, has been available in the English language.

†14 pounds.



THE CHARACTERS USED IN THE PROKOPOVYCH STAND-BOOKS.

1.—Signifies the end of the comb. 2.—Means the line of the nest, on which the other signs are drawn. 3.—Empty combs. 4.—Eggs just laid. 5.—Sealed brood cell. 6.—Cells, where brood emerged. 7.—The cup of the queen cell. 8.—The same with an egg. 9.—An open queen cell. 10.—A sealed queen cell. 11.—A queen cell where the queen was killed. 12.—A queen cell where the queen emerged. 13.—Virgin comb in a queenless colony, which differs from the normal one by its oblique and round margin with many cells. 14.—A sealed supplemental queen cell. 15.—A supplemental queen cell with an egg. 16.—An open supplemental queen cell. 17.—A sealed supplemental queen cell. 18.—A supplemental queen cell opened by the bees. 19.—A double supplemental queen cell. 20.—A supplemental queen cell, where queen emerged. 21.—A supplemental queen cell opened by the bees. 22.—Drone brood. 23-28.—The examples of notes of different states of the colonies. Such characters occupied little space and gave an instructive view of what happened in the colony.

entered the military service. Here a promising career opened for the young man, but he left it. He had no love for the Russia of the czar, and did not care to serve his government.

He returned home and spent all his time with beekeeping. There he developed a very rational system of beekeeping and carried on extensive operations. At times his apiary comprised as many as 10,000 colonies of bees. He invented a movable frame hive and put it into operation in his apiary. His hives were probably the first movable frame hives in history to be used in actual honey production. The blind naturalist, Huber, had used a leaf hive before the time of Prokopovych, but had used it in his study and not in the apiary.

The frames of the Prokopovych rested on the floor of the upper hive compartment. They did not hang and they lacked the bee space of the Langstroth hive, principles that at last put such frames in the hands of beekeepers everywhere. Years later the Baron of Berlepsch took the Prokopovych hive, suspended its frames and secured its adoption by the people of Germany and central Europe. But long before either Langstroth or Berlepsch bothered his head about bees, Prokopovych was sending thousands of these frames, filled with honey, to market. He published the details of his hive invention in 1814, just thirty-eight years before Langstroth patented his invention.

In the year 1826 Prokopovych founded a popular school of beekeeping, intending to raise the standards of his people that had been sinking under the heel of oppression. He asked the government to permit him to open a printing office at the school, but this he was not allowed to do. For this reason his lectures were never printed. He wrote in the Ukrainian language, had not the time to translate his lectures into Russian to be printed.

The first year the school had twenty pupils. But after a time it became so famous it was impossible to accept all those who wanted to be enrolled. The poor children went to Prokopovych, the children of peasants and workmen employed on the big estates of the nobility. This was according to the intention of Prokopovych who wished to improve beekeeping by making it once again a popular pursuit.

He made many enemies who fought him because he taught the people of the lower classes. But Prokopovych knew how to defend himself. He said that the truly low people were those who did nothing.

He taught his new rational beekeeping, using his own frames, which the students learned to make. He had, for the times, a perfect knowledge of the subject. He explained the life of bees, the development of their colonies, the fundamentals of queen rearing, the control of disease. He entrusted a part of the apiary to the care of his pupils. He had workshops for the production of hives and other utensils at the school. There were also large plantations of honey-producing plants, especially **echium vulgare,** "blueweed," as it is known in America. "The king of honey producers," Prokopovych used to call the plant.

The culture of honey producing plants was of great importance, he said, and he taught his pupils to found such plantations in every place where they might be active, as this work would be useful not only for beekeeping, but for agriculture in general.

Not only were the pupils taught beekeeping. They, also, in a practical manner learned other branches of farming, with a smattering of science as well. These sons of peasants were still close to the farm when they left the school after two or three years, having learned better how to manage their farms, not having been weaned away from them.

The beekeeping school of Prokopovych was the first and only one in Europe, perhaps in the whole world. It is still unique.

He tried to develop in his pupils independence and personal judgment. He never punished them, but treated them all cordially. To the mystification of other schoolmasters who flogged knowledge into their pupils, they learned quickly and were eager to spread their knowledge among their people.

The courses he taught are impressive, even today. The reports of the finished students are much like a list of the things the good beekeeper should know. The pupil had to show, by example, that he knew the different types of hives, and that he could manipulate them.

That he knew what kind of a queen was in the hive, or if there was none, and that he could requeen a queenless colony.

That he knew the number of workers in summer in young colonies and during autumn in old ones, and that he knew how to reinforce weak colonies.

That he understood the way of comb building and the six different kinds of cells, and that he could recognize diseased combs from normal ones.

That he knew how to recognize the symptoms showing whether a colony was in bad condition, according to the flight, humming, appearance of eggs, combs and of the nest.

That he knew how to compel bees to return to a swarm box, save queens, and put the swarm in a new, prepared hive.

That he knew how to make artificial swarms.

That he knew how to free colonies from foulbrood.

That he was able to weigh the hive with bees and to calculate the quantity of honey in each hive.

The pupils were taught how to note quickly the state of the colonies. Standbooks were known in the apiary of Prokopovych. By a combination of twenty-two characters, which the master invented and taught them, the students could mark down the state of each colony in the standbook. These notes occupied little space, gave an instructive view of the apiary, and could be understood and used by beekeepers who did not know how to write.

The Prokopovych school started a revival of beekeeping in Ukraine. He considered beekeeping a fundamental part of agriculture and tried to draw the attention of official institutions to the need of improving this branch of economics. Soon apicultural implements began to appear at expositions and books on beekeeping found a market. But the lectures of Prokopovych never were printed.

After his death in 1850 the school was directed by his son, Velykdan. The younger man preserved it in its original character until he, too, died in 1879. There, at Mychenky, for fifty-three years the peasants had been learning progressive beekeeping. Over 750 pupils had studied and finished there. Among them were Ukrainians, Russians, Czechs, Poles, Germans and many other nationalities. But when the younger Prokopovych died the school was closed, with the whole property sold.

The Russian government of the Czar was satisfied with its end, for beside beekeeping, the school kept alive in its pupils the love of their oppressed Ukraine.

ABJ

Conference on Disease

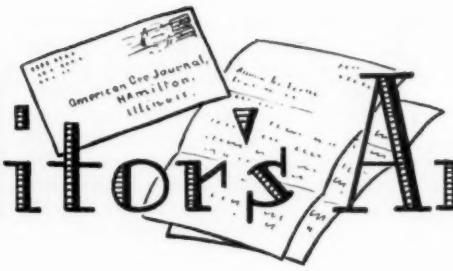
On September 26, 1936, was held a conference at Rothamsted Experiment Station, Harpenden, England, for the purpose of discussing bee diseases. A report of that conference has been published and a copy has recently come to the editor's desk.

The report contains three principal papers outlining the work that has been done in England, Switzerland and the United States. Dr. H. L. A. Tarr tells of the results of three years of investigation in England. Dr. Otto Morganthaler gives a similar report for Switzerland and James I. Hambleton for the United States.

There is also a brief paper on Bee Paralysis by Dr. G. D. Morison of the North Scotland College of Agriculture, and an introduction by Sir E. J. Russell.

Copies of the full report containing forty-three pages can be secured from the Rothamsted Experiment Station for 40 cents.

The Editor's Answers



How to Use Wax Cappings

In the article by Mr. Pering on using the wax cappings, I would like to know how to feed the cappings to the bees in the hive. Where is the best place to put the cappings so that it will not start robbing?
PENNSYLVANIA.

Answer (by Alfred H. Pering, Florida).—Do not feed outside the hive if the honey-flow is slight. Bees from almost any hive will work on scraps of wax if they are left exposed and if the wax is in warm sunshine, it will be softened and readily taken.

The most satisfactory way is to scatter the wet cappings on top of a three-wire and wood queen excluder and cover the excluder with an inside cover board or inner cover. It will gum up the excluder some.

If you do not like that, use an inner cover first just above the brood frames and then put on an excluder and cappings on top. Cover again with an inner cover. Of course the bee escape hole in the lower board must be left open.

When bees swarm, they are prepared for rapid secretion and so I usually wait a week or more before giving wax cappings. You will have to take the consequences if the bees reach the stage of drone comb building which will be near the end of the first cycle of brood rearing. I prefer that you use full sheets of foundation and let the bees use second hand wax for capping either brood or honey, rather than to use part sheets and have the combs finished out with drones.

My most pronounced results in making use of cappings is in queen cell building. You get more and larger cells without waiting for the slower secretion of wax for making them.

—ABJ—

Swarm Control in the Modified Dadant Hive

I have discovered that the Modified Dadant hive alone will not solve the swarming problem. My main concern is to discover a method of management with the big hive which will successfully reduce swarming. I plan to pull brood. How will I do it?

Mr. Sechrist stresses the idea of keeping the brood nest clear. If an empty super is placed above an excluder, will the bees move the honey out of the brood chamber into the super to provide more laying room for the queen?

I am planning to use a super of planer shavings on top of each colony for year round service, warmth and absorbent in winter and shade in summer. This can be quickly and easily removed and as easily replaced. I believe it will help in swarm control.

I am also interested in the possibilities of the deep entrance for the big hive as a swarm control measure. Did you ever try this?
ILLINOIS.

Answer.—Swarm control is certainly the foundation of success in honey getting. Successive swarming will defeat a crop any time. However, the Modified Dadant hive without proper management will ot prevent swarming. In extreme cases of persistent cell building for swarming, usually the queens are old and the cells are built under the supersedure impulse. It is best to keep young queens at all times.

In such persistent cases, we cage the queen, remove all queen cells built during the interval of ten days, and then requeen with a new young queen. This ends the swarming.

The plan of pulling brood in the spring is usually done from the 20th of April to the 10th of May when colonies assume strength enough so they will average four to six combs of brood, and with nectar available so the work may be done. Reduce each colony to about four combs of brood with extra bees. Move the divides, about four or five comb size, to a new location so the bees will not fly back to their point of origin.

Bees will not move the honey from the brood nest to the super above, whether or not an excluder is used, in time to provide room for the queen. You will have to do it yourself. We do not like the excluders with the big hive. Your plan of using top packing is all right.

We use the deep entrances altogether, fastening them permanently to the hives. If they are over an inch and a quarter deep, you will have to use a slatted false bottom to prevent building combs from the bottom bars of the frame to the floor of the bottom board.

—ABJ—

Temper of Colonies

During 1934 and 1935 I had a colony that was very bad tempered. Every time I opened the hive, they made it extremely hot for me. It was unsafe to go into the yard for at least an hour after handling the colony. Finally, they got foulbrood and so, this summer, I got another colony. The difference is amazing. I have been stung just once all summer—hardly enough for rheumatism antidote! How is this explained?
MASSACHUSETTS.

Answer.—The differences in the temper of bees of the same race is a remarkable think and a matter of common observance. I suppose it is not o be explained except by the accidental inheritance of the characteristcs which go to make up temper. Just as among people, we have those who are hot headed and those who are calm and self-reserved. There is a relation between temper and the amenability of bees to operations in apiary management. In commercial honey production an evenly tempered bee, one easy to get along with, is highly desirable.

—ABJ—

Late Supersedure

Would you please tell me why my colony started raising a queen as late as September 15th? It seemed to me that perhaps my queen wasn't very consistent in her egg laying, but why didn't the bees supersede her earlier? She wouldn't then have had time to become mated this fall. Or would it have been their intention to have her mate next spring.
MASSACHUSETTS.

Answer.—Your question is hard to answer. It is apparently a preserving instinct which expresses itself whenever bees detect deterioration of the queen already present. It will be experienced at any time of the year, even as late as you mention. I have seen colonies carry over virgin queens that were apparent on spring examination. It may be the cause of drone laying colonies found so often in the apiary in the spring. I have no way to prove it, but I assume it to be the probable reason.

—ABJ—

Clipping Queens

When clipping queens, what is the best way to catch and hold them? I once read an article describing a forked stick with a rubber band to hold the queen down while clipping. Did you ever try this?
ILLINOIS.

Answer.—To clip a queen, take her by the wings between the thumb and forefinger of the right hand. Place her legs across the index of the first finger of the left hand, and grasp the legs on one side of the queen by the thumb and on the other by the second finger, then release the wings and take the scissors and clip while she is thus held. We do not like the ed stick. There is too much chance of injury.

—ABJ—

What Is "Tule"?

What is the "Tule" mentioned by H. Hodson for winter packing? By what other names it is known and where may it be obtained?
NEBRASKA.

Answer by H. Hodgson, Waukesha, Wisconsin.—"Tules" are really bulrushes and are found in the South and Southwestern United States. The cattails and other rushes that are indigenous to Wisconsin and grow in marshes were what I referred to. There are several varieties. I used the word "Tules" inadvisably. These rushes are preferable to other material because of their cellular construction. I have used straw with very satisfactory results.

—ABJ—

Disease Resistance and A.F.B.

(Continued from page 25)

It is concluded, therefore, (1) that **resistance to American** foulbrood does exist in honeybees, and (2) that **the factor for resistance can be transmitted to offspring.**

Many of you know already that the U. S. Bee Culture Laboratory and several State Experiment Stations have made arrangements to cooperate with us in the further prosecution of this investigation. Such cooperation should hasten the day when American foulbrood can no longer levy upon our industry the heavy toll it exacts today. Surely we have reason to believe that a resistant strain of bees will eventually become a reality; but, as in the case of many another anticipated blessing, it could become a curse if vigilance against American foulbrood should be relaxed prematurely.

Signs Sell Honey

By Frank F. Johnson,

Wisconsin.

AS we speed along the highway at this day and age, there are so many signs to greet our eyes, that if they are not out of the ordinary, we pay scant attention to them.

For the roadside market, and especially those selling honey, some kind of an attraction must be arranged to let the passing motorist know you are there. There are many motorists who would be in the market for your produce, if they would see your stand in time so that an easy stop can be made. If your stand is not noticeable until the motorist is almost in line with it, he ordinarily would not attempt to stop, but hasten on thinking some other stand along his route would be just as good and more convenient.

The most important, outside of neat, easy reading signs is plenty of space in front of your stand for parking, with good solid groundwork, such as gravel, cinders, etc. If the area in front of your stand will accommodate two cars abreast, so much the better; but most motorists will balk at stopping when he cannot entirely clear the road where traffic is heavy. As a rule the average motorist does not care to drive up a private driveway to your home, even though your signs bid him a hearty welcome.

Good, clear, readable signs might be placed about 500 feet on each side of the stand facing the traffic reading **"Honey for Sale 500 ft. Ahead"** or such wording as you will find better adapted to your business. Bear in mind that if too many words are used, the average motorist cannot grasp them all, and the sign will go unread. On most roads, signs are not allowed, so you may have to resort to the adjoining farms or lots by permission from owner, posting the signs well up to the road limit.

The end walls of your stand, if a building, facing the traffic, would make a good surface for a sign. Make the most important words of your message in large, bold letters, so they can be seen a long way off. Red is the most flashy color and attracts attention; the balance of the wording should be in black lettering.

We all agree that an experienced sign painter can do a better job, but if you prefer to do it yourself and this is your first job, I would advise using white lead ground in oil for the background, and regulation sign colors for the lettering. Ready mixed paints are not satisfactory for lettering as they soon fade.

Letters can be drawn on cardboard with a pencil, so any errors can be erased and redrawn. If you use the block lettering as illustrated, you will have less trouble with the curved lines, as these letters are all made with straight lines, for example the "O" is made up of eight straight outside lines. The letters should be made two-thirds as wide as they are high, except the letters A, M, V, W, and Y which should be wider, almost square. Be sure to keep the mid-section the same thickness; the letter "I" should be as thick as any of the lines of the other letters.

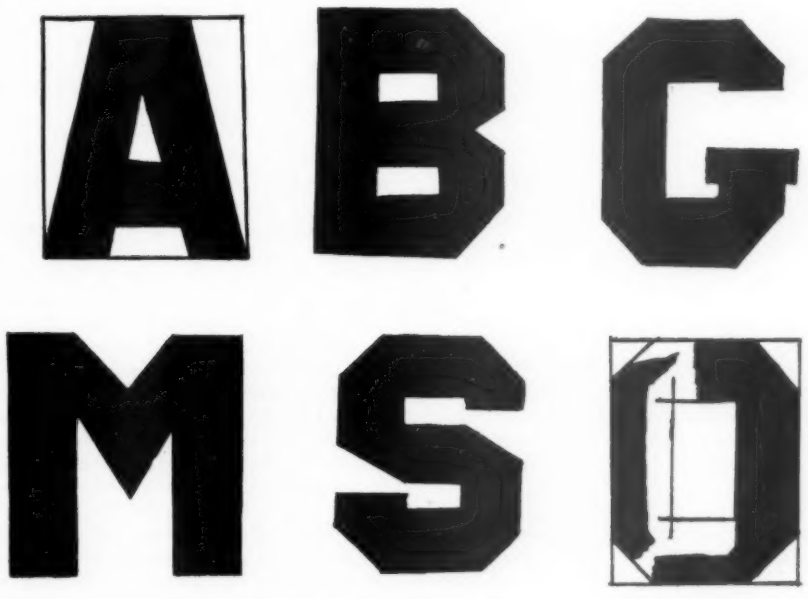
Do not space the letters all equally in the word. Try to have about the same amount of the background show between each of the letters. The straight sided letters should be spaced farther apart than two rounded or slant letters. These letters are cut out of cardboard and traced on your prepared signboard, being careful about the spacing between letters, words and margin. When this is done you can paint in the letters with a camel hair brush, drawing straight, even strokes along the letter outline.

An overhanging sign seems to me to be the most attractive. One I have in mind is a board with proper lettering, hanging by chains from a horizontal timber, which is connected either to the building or an upright post of the same material (4"x4" stock is good). This arrangement should be painted white, the signboard should be bordered with black moulding, the letters should be red and black.

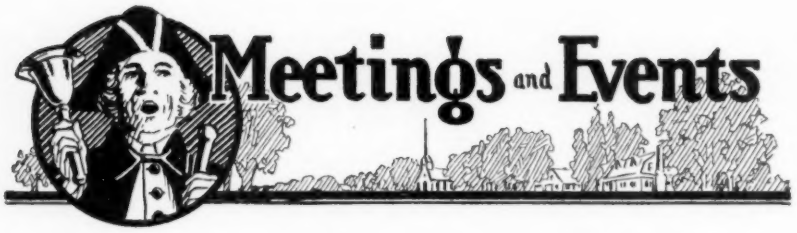
A few years ago, I had my home and apiary at the end of a road which connected with a road running at right angles. The heaviest traffic came from the road headed for the turn in front of the house, therefore I had to have a sign facing that road. I cut the letters from ⅜" board, 4" high, with a scroll saw and sandpapered them smooth, drilled two small holes an inch from each end. These letters were fastened to a piece of wire screen with frame wire through the small holes in the letter. I spread a coat of varnish over the face and edges of the letters and when the varnished surfaces became just slightly tacky I patted aluminum powder on them, brushing off the surplus that did not adhere. Aluminum shows up better than any other color for this kind of a sign, as it reflects the sunrays, thereby attracting more attention.

These letters attached to the wire screen was stretched with heavy gauged wire between two supports (in my case between two trees that were about twenty feet apart) so the sign would be at least twelve feet above the ground.

Coming up the road the sign could easily be read and what attracted the motorist most was that from a distance the letters only could be seen. It was equally, if not more, attractive at night when the headlights of the cars would light up the sign in such a way as to make the letters appear to be floating in the air without any visible means of support. Many comments on this sign were received from motorists and much honey sold to them.



The letter "O" is purposely left unfinished to show the lines of the oblong and how it is filled in. The letter "A" shows how slant letters are made inside the oblong.



Beekeepers' Short Course and Conference, Purdue University, Lafayette, Indiana, January 12-14, 1937.

Tuesday Morning, January 12. 9:00-12:00, Room 103, Agricultural Building. "Beekeeping Today," Geo. F. Cain, Muncie. "What the Beekeeper Should Know About the Uses of Honey," Aneta Beadle, Purdue. "Tricks of the Trade," L. R. Stewart, Newport, President Indiana Beekeepers' Association.

Tuesday Afternoon, January 12. 2:30-4:30, Agricultural Building. "Life in the Hive and Its Relation to Honey Production," B. F. Montgomery, Purdue. "Spring Management," W. A. Price, University of Kentucky. "Handling Bees During the Honey Flow," George Horst, Crown Point.

Wednesday Morning, January 13. 9:00-12:00, Room 103, Agricultural Building. "Producing Comb Honey in Indiana," B. J. Wilkins, Assistant State Apiary Inspector. "Requeening, Why, When and How," W. A. Price, University of Kentucky. "The Beekeeper's Tools and Equipment," B. E. Montgomery, Purdue.

Wednesday Afternoon, January 13. 2:30-4:30, Room 103, Agricultural Building. "1936 Winter Losses in Indiana," G. W. Lehker, Purdue. "Requirement for Proper Wintering," W. A. Price, University of Kentucky. "Methods of Wintering Bees in Indiana," J. E. Starkey, Chief Apiary Inspector of Indiana.

Thursday Morning, January 14. 9:00-12:00, Room 103, Agricultural Building. "Creating and Holding a Honey Market," L. R. Stewart, Newport, President, Indiana Beekeepers' Association. "Location of the Apiary," Ross B. Scott, Lagrange. "Characteristics and Recognization of Bee Diseases," B. E. Montgomery, Purdue. "Foulbrood Control in Indiana," J. E. Starkey, Chief Apiary Inspector of Indiana.

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Western Canadian Honey Wins.

At the recent Royal Winter Fair in Toronto western honey again secured practically all the awards in the extracted honey and granulated honey classes.

The Saskatchewan winners were: First, W. B. Dixon, Maple Creek. Fourth, W. K. Beattie, Speers. Fifth, Henry Moloney, Meadow Lake.

The other prizes in this class were secured by Manitoba beekeepers.

R. M. Pugh,
Provincial Apiarist.

Vancouver Meeting, January 12.

Election of officers of the Vancouver Island Beekeepers' Association was held at the annual meeting recently in Victoria, B. C. The officers and executive committee were elected unanimously.

G. E. Goodman and A. H. Curtis were returned as president and secretary-treasurer, respectively, while the executive committee was chosen as follows: Miss R. Arnott, W. H. Ball, J. F. Hepburn, G. H. Slater, G. E. Weismiller, S. A. Seyler, D. Scholes and A. Hardy, of Duncan.

The president announced that E. M. Straight, superintendent of the Dominion Experimental Station at Sidney, would be the guest speaker at the association's next meeting, Tuesday, January 12.

F. H. Fullerton,
Vancouver, B. C.

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Kansas Beekeepers to Meet February 11.

The regular winter meeting of the Kansas State Beekeepers' Association will be held in West Waters Hall, Manhattan, February 11. Besides the matters of business, there will be presented a program of speakers, including F. B. Paddock, state apiarist, Iowa State College; J. G. Jessup of the A. I. Root Company of Iowa, Council Bluffs; and R. L. Parker, state apiarist, and E. J. McNay, Kansas State College. The business meeting will be presided over by O. A. Keene, president Kansas tate Beekeepers' Association. The program of speakers has been arranged by Dr. Parker. This is the first winter meeting held under the new constitution of the State Association, and it is expected that there will be a large representation of Kansas beekeepers at this important event.

H. W. Stewart, Secretary,
Kansas State Beekeepers' Assn.

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Manitoba Short Course, January 18 to January 29.

The short course in beekeeping will be given at the Agricultural College of the University of Manitoba at Winnipeg from January 18 to January 29.

About fifty lectures and demonstrations will be given covering all aspects of the subject of practical beekeeping. The following topics are given as typical of subjects to be discussed: Literature dealing with beekeeping; beekeeping locations; Canadian beekeeping; how to begin; races of bees; extracted honey production; comb honey production; management during each season; frames and foundations; swarm control and increase; queen rearing; requeening; food and feeding of honeybees; package bees; classifying and grading of honey; judging honey; honey and its uses; chemistry of honey and beeswax; production and uses of beeswax; marketing honey; external structure of worker, queen and drone; internal structure of the three forms; clover management; bacteria in relation to honeybees; bee diseases; floral structures; pollen and nectar producing plants; factors influencing honeyflow; relation of bees to fruit growing, etc.

In addition to Prof. Mitchener and Mr. L. T. Floyd, who will give most of the lectures and demonstrations, approximately eight other speakers from University Departments will lecture to the short course students.

During the last week of the course members of the Manitoba Beekeepers' Association will meet for two days in their annual convention. The afternoon and evening sessions will become a part of the short course and provide an opportunity for students to meet the leading beekeepers of the Province.

Registration fee is $5.00. Board and room may be obtained in the Manitoba Union, university residence, at the rate of $6.50 per week.

Further information may be obtained by writing the Dean of Agriculture, Manitoba University, Fort Garry Site, Winnipeg.

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The Annual Illinois Short Course January 12 to 14, University of Illinois.

The Annual Short Course in beekeeping for Illinois under Dr. Milum will be held at the University of Illinois, 104 Experimental Zoological Laboratory, during Farm and Home Week. The dates of the beekeeping course are Tuesday, January 12, Wednesday, January 13 and Thursday, January 14. Those who attend for the full week will please take note there are many other courses on the campus at this time for the farm and home maker. A complete program may be obtained by writing to the University of Illinois.

The instruction force will consist of Dr. Milum, G. H. Cale, of American Bee Journal; C. L. Duax, inspector of apiaries; Dr. Tracy, of the University Dairy Department; I. C. Evans, beekeeper, at Decatur; W. G. Duckwall, president of the Illinois State Association; W. W. Osborn, treasurer of the Association. There will also be discussions and demonstrations by the honey hostess selected by the Illinois Honey Foundation.

As usual, the subjects will include

the fundamentals of beekeeping practice from one end of the year to the other and the use and marketing of honey. Those who are interested in the beekeeping program should write to Dr. V. G. Milum at the University of Illinois.

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Bronx Beekeepers Meet January 10.

The January meeting of the Bronx Beekeepers' Association will be held January 10 at the home of the secretary, right in the "heart of Manhattan," 150 W. 78th Street, New York City. Two colonies of bees on this roof last year gathered several pounds of comb honey from Central Park and along Riverside Drive, flying over tall apartment buildings to bring home their treasure in a bee line away from traffic lights.

Mr. Gould, State Apiarist of New York, has been invited to be present to enlarge our knowledge of diagnosis and eradication of American foulbrood. We will show another motion picture relative to beekeeping as well as a couple of short comedies. The charming daughter of Mr. and Mrs. Semich, who so nicely entertained us in December, will keep our eyes on the floor while she goes through some tap dancing interpretations. We will have our usual confab and then yours truly, the "bachelor beekeeper," hopes to have the assistance of the ladies of the association in the serving of refreshments.

The meeting at Semich's certainly was full of interest. Never a dull moment. Those absenting themselves from recent meetings are missing much. It is a pleasure and a privilege to have such distinguished visitors as Messrs. Howk and Conner, of New Jersey, with us. Come often. We are planning to make each successive meeting bigger and better, so don't miss this one. A delegation of beekeepers from Kings and Queens counties attended and were received into the organization in the usual manner. We hope they enjoyed themselves and will be regular attendants and will bring others.

Mr. Conner took the secretary up on the challenge he made in the December issue of American Bee Journal in which yours truly challenged Mr. Conner to have Essex County debate the Bronx Association on any beekeeping subject. Already the debating teams have started to burn the midnight oil searching for points (not bee stings) to base their arguments on. Mr. Howk displayed a sample of honey frost which he bought while out in Ohio this past summer and explained that it was pure Ohio honey which had granulated and then had been whipped for a considerable time until it reached a creamy consistency. The top of this product is as white as virgin snow. It is delicious and spreads easily and should find a good market. Our baking beekeeper, Charlie Lischke, supplied us with honey cakes which Mrs. Jensen should have the recipe of. Mrs. Semich baked a Virginia ham which weighed fourteen pounds when it came out of the oven; but after the beekeepers had gone, all that was left was the bone. Congratulations Mrs. Semich on your cooking. We thank you.

Our Annual Barn Dance will be held in February, and committees will be appointed at this coming meeting.

We again invite traveling beekeepers and beekeepers from Brooklyn, Westchester, Staten Island, Bronx and Long Island to attend our meetings. For directions as to how to get to these meetings, write the secretary, John S. Ferguson, 150 West 78th Street, New York City.

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Kentucky Association, Lexington, January 26-28.

The Kentucky Beekeepers' Association will hold its annual meeting in Lexington on January 26, 27, and 28, 1937. A program of general interest to beemen is being arranged. Dr. E. F. Phillips, of Cornell University, will be an out-of-state guest speaker.

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Oregon Beekeepers Keep President.

Climaxing one of the most interesting conventions of the state, the Oregon Association voted to retain Lewis M. White, of Portland, as their president for another year along with other new officials—J. Skovbo, of Hermiston, vice-president; H. A. Scullen, of Corvallis, secretary-treasurer.

Departmental chairmen were selected to further various phases of interest, each with a special committee at his disposal. Mr. Skovbo, rganization; Mr. W. C. Foster, of Portland, marketing; W. G. Rodda, of Hermiston, fairs and exhibits; John D. Burt, of Newberg, A. J. Sanford, of Redmond, E. R. Sires, of Stanford, inspection activities; S. D. Williams, chairman of research; Mrs. Callie Osgood, of Newberg, education.

Mrs. Florence M. Bennett, of Birkenfeld, was elected state chairman of the Women's Auxiliary with Mrs. Lewis White, vice-chairman, and Mrs. Osgood, secretary-treasurer.

Mr. Foster, chairman of the marketing department, delivered an outstanding paper on marketing. Frank E. Todd, George H. Vansell and R. K. Bishop discussed "The Influence of Pollen Reserves on Colony Development." Frank McKennon, of the Oregon Department of Agriculture, gave a talk on "State Inspection and Honey Grading."

President Kelty, of American Honey Institute of Michigan, outlined for the benefit of Oregon beekeepers the important work of the Institute, urging cooperation among honey producers to improve the marketing conditions. In Michigan, Mr. Kelty reported, "When we proved that bees produced value in other commodities amounting to $25 for every dollar's worth of honey they produced, many persons recognized the existence of an important and growing industry."

As an illustration of this, he introduced figures proving the benefits of the 323,000 colonies in Michigan in pollenizing the agricultural resources of that states.

C. M. Litteljohn,
Washington.

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Idaho State Beekeepers' Meeting.

We have just concluded the Idaho State Beekeepers' meeting at Burley, Idaho. A good attendance was recorded. R. H. Kelty, President of the American Honey Institute, was with us and gave a most interesting talk on the benefits which are derived from the Institute. We are backing it 100 per cent and local and state associations are asking members to pledge themselves to 3 cents per case for every case of honey produced. This amount is to be turned over to American Honey Institute and based on the Idaho production yields over the past five years, should result in Idaho contributing approximately $1,050 this coming year.

A banquet was held Friday evening, December 11, at the Methodist Church. R. D. Bradshaw, of Wendell, was toastmaster on this occasion and called for responses from many prominent beekeepers. Our oldest member in attendance was Mr. J. E. Miller, age 83, of Idaho Falls. Another prominent beekeeper was Mr. McClanahan, of Payette, Idaho. Mr. McClanahan is in his seventies and claims to have been a subscriber to the American Bee Journal for the past twenty years.

The Superior Honey Company was host to beekeepers at a luncheon Saturday noon, also held at the Methodist Church. The meeting was adjourned Saturday afternoon, to meet next year at Twin Falls, Idaho, at a time to be set by the president and secretary of the Idaho State Honey Producers' Association.

Election of officers resulted in J. J. Lockie, Shoshone, Idaho, past vice-president, being elected president for 1937; Earl Miller, Blackfoot, Idaho, was elected vice-president; and Douglas Bradshaw, Wendell, Idaho, was elected secretary-treasurer.

Frank Beach, Jr.,
Idaho.

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Will-Grundy (Ill.) Meeting.

The Will-Grundy-Kendall County Beekeepers' Association held their third annual meeting in the town hall of Elwood, Ill., Dec. 6, 1936. The

motion picture "Realm of the Honeybee" and slides of "Wintering Bees" and "Advertising Honey" were shown. Speaker from out of the state was Gordon Bell, who talked on beekeeping in North Dakota. The very complete program was enjoyed by all.

Elmer Luebeck, Secretary,
Elwood, Illinois.

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New Delaware Association Has First Meeting.

Elwood Nuckols, Cheswold, was elected the first president of the Delaware State Beekeepers' Association last week at a meeting held in the Caesar Rodney School, Camden, Wyoming, at which the organization was formed.

Other officers of the new association are: vice-president for Essex County, Asa Reynolds, Georgetown; vice-president for Kent County, Charles A. Peet, Frederica; vice-president for New Castle County, John L. Phillips, Newark, and secretary-treasurer, Paul L. Rice, extension entomologist, University of Delaware, Newark.

A constitution, written by a committee appointed at county meetings recently, was adopted without change by those present at the state meeting and aims for the year included expansion of membership, promotion of a honey exhibit at the Kent-Sussex Fair, and disease control work with the cooperation of the Extension Service.

The work done in the four bee culture laboratories of the U. S. Department of Agriculture was described by James I. Hambleton, in charge of bee culture work for the U. S. Department of Agriculture who said that work in developing strains of bees which would be resistant to foulbrood disease was showing promise.

"Fifty per cent of the colonies coming from these strains," he said, "have been unaffected by disease organisms introduced into the hives. The resistant strains are to be subjected to further testing and eventually to be made available to beekeepers."

The American foulbrood disease, which results in the death of thousands of colonies each year, has become the most serious drawback to bee culture in the United States, Hambleton pointed out. The disease resistant bees being developed will fill a long felt need and should be in great demand when and if the tests and experiments prove the strains to be resistant.

Other speakers on the program were A. Howard Johnson, Centerville, Md., and George J. Abrams, specialist in bee culture at the University of Maryland, College Park, Md.

Illinois District No. 1.

The beekeepers of Illinois District No. 1, Joe Daviess, Stephenson, Carroll and Whiteside Counties met at J. D. Blocker's home in Pearl City, September 18. A picnic dinner was served, a social hour with talks and reports, also a debate, "Honey Should Not Be Labeled Before Judging." It was decided that the use of the words filtered or pasteurized in connection with market packs are not necessary since pure honey is sufficient. Honey prices and inspection problems were discussed, and E. J. Babb, of Pasadena, California, gave an interesting talk on beekeeping in that state in regard to transportation and migration being necessary for nectar sources.

H. J. Barr,
Secretary Pro-tem.

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Ohio Meeting January 26, 27, 28.

The Ohio beekeepers' winter meeting is scheduled during Farmers' Week, January 26, 27 and 28, in the Botany and Zoology Building, Ohio State University, Columbus, Ohio. Out of state speakers will be Prof. Phillips and Prof. Kelty. The diversified program will cover many phases of beekeeping.

W. E. Dunhm, Secretary,
Columbus, Ohio.

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Annual Meeting Pennsylvania State Beekeepers' Association, Room D, Farm Show Building, Harrisburg, Pa., January 20 and 21, 1937.

Wednesday morning at 9:30. — Meeting called to order by the president, H. M. Snavely, 221 Walnut St., Carlisle, Pa. Convocation. Address of Welcome, Hon. J. Hansell French, Secretary of Agriculture, Pa. "Honey Krushed Wheat Bread," D. L. Burkholder, Sec.-Treas. Lancaster County Honey Producers' Association, Leacock, Pa. "Beekeeping as a Hobby," John S. Fleck, President Allegheny County Beekeepers' Association, 625 Kirtland St., Pittsburgh, Pa. Secretary-Treasurer's Report, A. T. Keil, Mars, Pa. "A Few Remarks," Secretary-Treasurer.

Wednesday afternoon at 1:30. — President's Address, H. M. Snavely, Carlisle, Pa. Election of Officers. "4-H Beekeeping and Its Future," Mr. Geo. H. Rea, Assistant Professor of Apiculture, Cornell University, Ithaca, N. Y. "Artifiicial Mating of Queens," Dr. W. J. Nolan, Apiculturist, Department of Agriculture, National Agricultural Research Center, Beltsville, Md. "Marketing Honey," Prof. Edwin J. Anderson, Bee Specialist, State College, Pa. "What Old Timers Think of the Pennsylvania State Beekeepers' Association," by old timers. "Honey Candies and Honey Lemonade," D. C. Gilham, Hon-E-Nut Candies, Schuylkill Haven, Pa.

Wednesday evening at 6:30.—Beekeepers' Banquet, Jackson's Restaurant, 208 Walnut St., Harrisburg, 75 cents. Remember the good time we had last year? "Experiences of An Extension Specialist," Prof. Geo. H. Rea. "Swarming," Dr. W. J. Nolan. Remarks, visiting bee supply representatives.

Thursday morning at 9:30.—"The Use of Beeswax in Making Candles," D. C. Babcock, Advertising Manager, The A. I. Root Co., Medina, Ohio. "Tse Use of Honey in Summer Drinks," Enos H. Hess, Sec.-Treas. Cumberland County Beekeepers' Association, Mechanicsburg, Pa. "Nectar Secretion," Dr. W. J. Nolan, Apiculturist. "Answers to Some Questions Asked by Beginners Whom I Contact," Mr. F. W. Gravely, The A. I. Root Co., 148 Chambers St., New York City. "Queenbreeding in Pennsylvania," J. B. Hollopeter, Queenbreeder, White Pine Bee Farm, Rockton, Pa. "How to Increase Honey Consumption," Jerre C. Frazer, Manaager G. B. Lewis Co. Branch Office, Wheeling, W. Va. "Extracting Equipment for the Honey House," Prof. Edwin J. Anderson. Report from counties getting appropriations from county commissioners for inspection.

Thursday afternoon at 1:30.—"Report of Apiary Inspection in Pennsylvania," H. B. Kirk, Apiculturist, Department of Agriculture, Harrisburg, Pa. "Winter Management," Prof. Geo. H. Rea. "Production of Honey from Package Bees," Rev. H. M. Snavely, Carlisle, Pa. "Treating Bees for American Foulbrood," A. T. Keil, Apiarist, Treesdale Farms, Mars. Pa. "Beekeeping in the W.P.A. Educational Program," W. E. Davis, Route 1, Wayne, Pa. General discussion, "How Can We Improve Our Association?" Business session.

—ABJ—

Meditations of a Seventeenth Century Beekeeper

Rowse up then thy thoughts, O my Soule, let these worldly Pismires (ants) toile about their Hils, and busie Bees about their hive; . . . in a vaine shew or shadow walks he, disquieting himselfe in vaine, that heaps up riches and knows not who shall gather them. . . . I will get up thither, even farre above myselfe, far above all Heavens, and thence with a Spirituall and heavenly eye look on the earth, and not here and hence with a carnall and sensual eye look on Heaven; . . . so shall not my sense of earth annoy my reason; so shall not my reason perplex my faith, but I shall use it to helpe and not to hinder my present Pilgrimage. — From Samuel Purchas by W. H. Hull.

ANNOUNCEMENT:

Two Strains of Bees for 1937

Due to a considerable demand for a dark strain of Italian Bees, we have acq ired and bred a very satisfactory 3-banded leather-colored Italian bee which we believe will give entire satisfaction.

This is in addition to our OLD RELIABLE BRIGHT ITALIAN STRAIN.

When writing please specify strain preferred. Our prices for 1937 will be Marketing Agreement Prices. Send for our new descriptive circular.

GARON BEE COMPANY ❖ **DONALDSONVILLE, LA.**

Package Bees & Queens

ITALIAN FOR 1937

Any quantity with the best quality. Write for information.

R. E. LA BARRE
Box 172, Cottonwood, Shasta Co., Calif.

PACKAGE BEES and QUEENS

Do you want bees this season when "YOU" WANT THEM?
If so, write at once to
AL WINN
Rt. 2, Box 161 Petaluma, California.

HONEY FOR SALE

Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. containers.

DADANT & SONS :: HAMILTON, ILL.

WE all know Honorable Jim Farley. He is a good guesser. We are no Jim Farleys, but the way things look now, our guess is that unless the northern beekeeper places his order early, when shipping time arrives he will be disappointed. *Remember*: We ship standard nuclei, also nuclei on Modified Dadant combs.

The Puett Company

"Where satisfaction is a certainty."

HAHIRA, GEORGIA

Our 12 Years' Past Policy

Nothing shall be spared in the nature of Courtesy, Prompt Service or Fairness in business relations, to establish an enduring friendship with every patron.

COMMERCIAL QUEEN BREEDERS -- PACKAGE BEE SHIPPERS

We anticipate a large surplus of queens during the shipping season. Discount will be consented to dealers.

Red Stick Apiaries & Co.

Post Office, Montegut, La. *Telegraph Office, Houma, La.*

Dadant's Surplus Foundation

A Standard of Perfection

This foundation gives each section a delicate center that blends perfectly with every bite. Remember, a well pleased customer is an asset.

SOLD BY ALL LEWIS-DADANT DEALERS
Dadant & Sons :: Hamilton, Ill.

PACKAGE BEES -:- QUEENS

75c for queens. 2-lb. package with queen, $2.45. 3-lb. package with queen, $3.15. 15% discount to dealers.

Over 25 years' experience. 10% down books order.

WE DO LOTS OF TRADING. WHAT HAVE YOU TO TRADE?

BLUE BONNET APIARIES, Route 1, Box 33, Mercedes, Texas

The **Atlantic**

the home of Wonderful Food

Every advantage of a fine hotel is yours when you stay at Hotel Atlantic, Chicago.

450 Rooms

from $2.00 with Bath

from $1.50 with Bath Privileges

CHICAGO

Clark St., at Jackson Blvd.

PURE ITALIAN QUEENS

Stock Imported from Northern Italy

Pure Italian queens, bred from mothers imported from northern Italy. All leather colored. You'll like them. They are different.

Will begin shipping about April first.

PRICE—75c EACH, ANY NUMBER.

MIDDLE TENNESSEE APIARIES

JOE B. TATE & SON

1029 LISCHEY AVE. NASHVILLE, TENNESSEE

"BETTER BRED QUEENS" PACKAGES Young Bees

Honest weight, three-banded Italians. Be wise and book your orders early for 1937. Orders booked without deposit. Trade Agreement Prices. 2-lb. Pkgs. with Queen, $2.45. 3-lb. Pkgs. with Queen, $3.15. Queens 75c each. Dealers' discount 15%.

CALVERT APIARIES, CALVERT, ALABAMA.

FINE ITALIAN

QUEENS AND PACKAGE BEES

LARGE SUPPLY - FAST SERVICE - FULL WEIGHT

WRITE FOR PRICE LIST

HOLDER APIARIES

CITRONELLE, ALABAMA

Toward a Flying Start in Early Spring

By C. W. Wood,
Michigan.

It has often been said that, if the northern beekeeper could bring full-strength colonies through the winter and was properly situated as to nectar and pollen plants for early spring, he could get three major honey harvests instead of the one now secured. The first of these requirements is beyond the scope of these notes, but it is hoped that they may direct attention to a few plants that will fulfill the second.

Probably no plant, native or introduced, is a better source of pollen than the familiar skunk cabbage **(Symplocarpus foetidus)**. Many are the legends that have become a part of the literature of the plant and much inaccurate information has been published about it. Of the latter is the more or less prevalent notion that carrion flies are the only insects that visit its flowers, while, as a matter of fact, any careful observer can tell you that bees are eager after the pollen long before carrion flies are in the air. Doolittle pointed out the fact back in the beginning years of the present century that the skunk cabbage, when present in quantity, was an important source of pollen to stimulate early brood rearing.

Undoubtedly more beekeepers, who have suitable growing conditions, would introduce the skunk cabbage into their plantings if they knew it was easy to raise from seed. If seeds are planted in a soil made up mostly of well-pulverized leafmold in an outdoor shaded frame just as soon as they are ripe, which occurs in August and September, they will germinate readily the following spring. The plants should be allowed to remain in the seed bed until the following fall, being sure that they never suffer for moisture, and may be put in their permanent home after becoming dormant. The plant grows naturally in moist woods and should have conditions approximating that ideal.

For the same moist conditions preferred by the foregoing, there is a rapid-growing native tree, the red maple **(Acer rubrum)**. This is too well known to need description or comment, except to say a few words about its propagation. Seeds germinate within two weeks, providing they are planted as soon as ripe, and the plants grow very rapidly, being ready to be transplanted to permanent quarters the following spring. The culture of this maple is not a lifetime job and it may be planted with the expectation of get-

ting abundant bloom within ten years or less.

If the beekeeper has not the moist conditions spoken of before, there are still a number of easily-grown plants that he can grow for the early stimulation of his co-workers. Of these, our native pasque flower **(Anemone patens)** and sweet arabis **(Arabis albida** or **A. alpina)** deserve consideration. The first of these is a prairie flower, maintaining itself under the trying conditions found there and is most persistent under garden culture if given a well-drained soil. It is a low-growing plant, with large lilac flowers which appear soon after the frost leaves the ground. They yield an abundance of pollen which is eagerly sought by the bees. It is easy to grow if seeds are planted outdoors in the fall, so frost action will help in germination, and may be sown where the plants are to remain permanently, though one year under controlled frame culture will reduce mortality to a minimum during the seedling year.

The sweet arabis seems to have had little or no attention from beekeepers in this country so far as I have been able to determine. In some quarters of Europe, however, it is highly esteemed as an early spring stimulant and I have observed that my own plants are always smothered with bees all during their long blooming season, starting in April in northern Michigan. The plant is easy to grow in all well-drained soil in full sun or light shade, self-sowing with freedom. When large numbers of plants are wanted the seeds can be lightly broadcasted on finely-pulverized soil and raked in with a garden rake. There will be some losses, of course, if that method of culture is followed, but even so, many thousand plants can be grown at the cost of little labor and not much cash.

—ABJ—

Seven Foot Clover on Davis Islands

We are indebted to a subscriber for a Tampa Sunday Tribune clipping with a picture of W. C. Tinsley holding above his head the top of a seven foot sweet clover plant on Davis Islands. The tremendous height of the clover is unusual. Mr. Tinsley discovered the clover and was surprised to find it here. The annual sweet clover, also, on Davis Islands is three feet tall and it is not unusual to find the bi-annual of the seven foot height. Tinsley reports that the seeds apparently were brought from the mid-west in bales of hay for mules and horses.

According to the Tampa clipping, "Sweet clover is the best honey producer of all the clovers."—(Amen!)

honey jars

"Exceline Jars"... range in size from ½ pound to 4 pounds.

"Tall Cylinder Jars"... range in size from 1¾ oz. (individual service) to 3 pounds.

"Skyline Jars"... range in size from ½ pound to 4 pounds.

"Beehive Jars"... range in size from ½ pound to 2 pounds.

Hazel-Atlas offers a wide list of containers for the honey packer—the Tall Cylinder, the Skyline, the Beehive—and now the new Exceline Jars. All easily packed and labeled. Write for free samples.

HAZEL-ATLAS GLASS CO.

WHEELING, W. VA.

New CAPPING MELTER

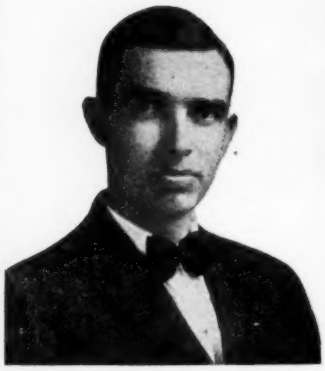
Uses waste steam from capping knife.
No injury to honey—no wax or specks.
No honey left in the wax.

Solves the Problem of Melting Cappings

"Another milestone in beekeeping passed."
—John Semon, California.

"Wax of premium grade. Honey runs out clear and clean."
—Ralph Barnes, Nebraska.

Write to W. T. BRAND, Mitchell, Nebraska.



WALTER T. KELLEY

OUR CUSTOMERS WRITE BETTER ADVERTISEMENTS THAN WE CAN

"We have your shipment of bee supplies. On examination, we are pleased to report that the quality is very satisfactory, and especially the workmanship, which makes the fitting and nailing a pleasure."

A Kentucky Customer writes the above.

"I wish to say that everything that I have bought from you has been very satisfactory, and just as represented. I am very well pleased with the supplies. You can be assured that all future orders will be placed with your company."

An Illinois Customer writes the above.

QUALITY AT LOW PRICE

Write for my 1937 catalogue if you are not on my mailing list. There are several important improvements for 1937. At prices you can afford to pay.

The WALTER T. KELLEY CO. :: PADUCAH, KY.

Manufacturers of BEEKEEPERS' SUPPLIES

A GOOD COLONY FROM EVERY PACKAGE

That is our aim for 1937

We will do our part by giving heavy weight of young bees, a select three-banded Italian queen and prompt shipment so the package should build up to a strong colony for the honey-flow.

2-lb. Package with Queen	**$2.45**
3-lb. Package with Queen	**3.15**
4-lb. Package with Queen	**3.85**
5-lb. Package with Queen	**4.55**
Young Queens	**.75**

Queenless packages deduct price of queen.

15% discount to dealers.

Orders booked without deposit.

CITRONELLE BEE COMPANY

CITRONELLE, ALABAMA

"APPRECIATION"

IT would indeed be a pleasure, if it were possible, to shake hands with everyone who attended the International Beekeepers' Conference recently held at our hotel and to say "THANK YOU." Not only those who were guests at our hotel but all of you. ● We have never handled a convention that has given us the satisfaction of having had with us such a large number of people who conducted themselves in the perfect and orderly manner as have the beekeepers. ● I have endeavored to please you all and I hope I have succeeded and it is my earnest wish that I may see many of you again in the near future and if I should fail to recognize you just tell me that you are a beekeeper.

WM. NAGEL, Manager.

CROCKETT HOTEL :: SAN ANTONIO

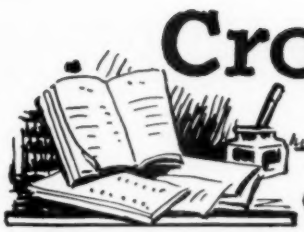
An Easily Managed Home for Your Bees

A good hive has all the room the queen needs and also room for food and young. Often over 100,000 cells are needed at one time. No hive but the Modified Dadant gives this room in one compact body. It produces big colonies and big crops.

Send for this sixteen-page booklet telling how the Modified Dadant Hive is used by successful honey producers.

DADANT & SONS

Hamilton - - - Illinois



Crop and Market Report

COMPILED BY M.G. DADANT

For our January Crop and Market page, we asked reporters to answer the following questions:

1. How is honey selling locally?
2. How is the demand from larger buyers?
3. Price compared to a month ago.
4. What per cent of the honey is out of producers hands?

How Is Honey Selling Locally?

Practically without exception, reports are to the effect that honey is selling locally at least up to normal and in many instances above normal. No doubt the shortage of vegetables and fruits for canning, as well as a shortage of fresh fruits, has been conducive to the use of honey instead.

In addition, although we have not had extremely cold weather, the cooler weather has set in fairly early and a demand was thereby created for heat producing foods such as honey.

Are Large Buyers Demanding Honey?

Reports answering this question were conflicting. In the New England states and perhaps in most of the East, reports are that buyers are still taking up honey fairly readily.

However, as you approach the Central West and the plains and intermountain states, as well as California, there is a definite feeling that the buying on the part of the large buyer is very much restricted over what it was a month ago.

This is not an unnatural condition as usually during the Christmas holidays and immediately thereafter, there is a slump in the buying on the part of the large users. In addition this year we have a condition which has extenuated shorter buying and that is the maritime strike along the eastern and western coasts, which has prohibited the exporting of honey to foreign countries or exporting from California to the eastern coast. This has no doubt absolutely curtailed any buying where water shipping was involved and has made the inland buyer perhaps a little slow to purchase many additional supplies until it was seen just what would happen to the honey markets as a result of the strike.

On the contrary, however, there seems to be more demand on the part of beekeepers for honey than a month ago. Numbers of beekeepers are getting out of honey and are hunting for additional lots to fill in. We also have reports of additional buying by L.C.L. buyers. Buyers who are not in a position to purchase in carload lots and have been disposing of more honey than usual are on the lookout for less than carloads.

Price Compared to One Month Ago.

Even in view of the maritime strike, there seems to be very little change in the prices over a month ago. There has been very little advance in retail prices and on the other hand very little decline in the prices offered by the large buyers, particularly in the eastern and southern states. Again, however, if we approach the Central West and the Rocky Mountain territory, we find the effect of the maritime strike in evidence. In other words, the buyers realize that no honey is going out for export and as a consequence there is a possibility of somewhat of a slump in prices and therefore offerings are made on perhaps a little lower basis than formerly or at least the buyers look askance at paying the same price as a month ago.

Along the Pacific coast there is very definitely a reduction in the price of honey of perhaps ½ cent a pound. This should not be considered very serious, however, as it is very apparent that all the honey on the California coast can move in local trade if that becomes necessary.

Per Cent of Output Out of Producers' Hands.

The New England states perhaps have the largest amount in the producers' hands varying from 50 to 75 per cent. This is largely due to the fact that the producers up there are still more apt to maintain their stock so as to be able to insure their customers a supply during the year.

In all other sections, however, and as we move westward, we find the stocks better cleaned up; in all other sections at least 80 per cent of the honey is out of the hands of producers and in many instances reporters state that 95 to 100 per cent has left the producers' hands. This is particularly true in the northern intermountain territory as well as in Utah, Idaho and Nevada. It also applies quite largely to California and to all of the southern and southeastern states.

We know of no season in recent years where so early in the season as before the holidays so large a percentage of the honey has been disposed of by the producers.

While the prices may be damaged in a jobbing way for some little time after Christmas by the maritime strike, we do not look for this damage to last indefinitely just because the stocks on hand, we believe, will not be any more than sufficient to cover local needs with export markets.

And should the maritime strike be concluded and exports start moving, undoubtedly there will be a reverse effect, at least to some extent, provided the settlement of the strike comes sufficiently early in the spring so as to give a distributing period before new crops are available.

Summary.

All in all, the crop seems to be moving satisfactorily and at a satisfactory price with most producers who still hold their crop in a position to hold at least until the early spring season for the prices they have expected to get.

Renew Your Subscription
Write for Our Special Club Offers
AMERICAN BEE JOURNAL

Iverson Honey Company (Not Inc.)
Successor to
Edwin H. Guertin, 201 N. Wells St., Chicago
Extracted Honey bought and sold
Reference: First National Bank of Chicago.

Are You Ready for This Season?
Have you gone over your equipment? Have you plenty supplies? Advertisers in the American Bee Journal will welcome any inquiry sent to them.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

"SHE-SUITS-ME" QUEENS. See page 155 of March number. Send for circular.
Allen Latham. Norwichtown, Conn.

THREE-BANDED ITALIAN QUEENS 75c each, any number. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, N. C.

A NEW SERVICE FOR BEEKEEPERS. Three-Banded Italians, mailed in our special introducing cage. Guaranteed to safely introduce to normal queenless colonies, or replacement free if our directions are followed. One to five, 75c each.
Silver Run Apiaries, Phenix City, Ala.

CAUCASIAN PACKAGE BEES. Booking orders now for 1937 delivery. 2-pound package with queen $2.45; 3-pound package with queen $3.15. 15% discount to dealers.
P. B. Skinner Bee Co., Greenville, Ala.

HONEY FOR SALE

FOR SALE—Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's.
David Running, Filion, Michigan.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. THE COLORADO HONEY PRODUCERS' ASSN., 1324 Market St., Denver, Colorado.

FOR SALE—Extracted honey in new 60's. H. Blitz, P.O. Box 3438, Philadelphia, Pennsylvania.

TUPELO HONEY—Will not granulate. Barrells, new 60's, seven and eight cents.
Anthony Bros. Honey Co., Apalachicola, Fla.

FOR SALE—New Comb and Extracted Honey. H. G. Quirin, Bellevue, Ohio.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey & Wax Company, Inc., 265-267 Greenwich Street, New York.

WHITE CLOVER HONEY in 60-lb. cans at 8c lb. Write for prices on large quantities. Sample 15c.
F. W. Summerfield, Grand Rapids, Ohio.

ALMOST WATER WHITE MANGROVE honey in new sixties. Also amber honey.
Peter W. Sowinski, Fort Pierce, Florida.

CLOVER COMB standard beeway sections.
C. Holm, Genoa, Illinois.

FINE CLOVER HONEY 7c.
Edward Klein, Gurnee, Illinois.

FOR SALE — Fancy, well ripened, white sweet clover honey in 60-lb. cans. Extra good quality. Dadant & Sons, Hamilton, Ill.

SPECIAL PRICE on Fancy Comb White Extracted, 8c. N. B. Querin, Bellevue, Ohio.

75 CASES BUCKWHEAT COMB HONEY, fancy and No. 1.
Noel J. Loucks, Springboro, Pa.

LIGHT AMBER in new 60's, 7c.
E. S. Miller, Valparaiso, Indiana.

CARLOAD OF FINE IDAHO HONEY.
Roy Selwyn Wilson, Wendell, Idaho.

300 CASES FINEST QUALITY WHITE SWEET CLOVER HONEY. 50 cases, or less, 7c per lb. The whole lot at 6¾c, f.o.b. here at Dunlap, Iowa. Sample, 10c in stamps.
E. S. Miles & Son.

FANCY CLOVER COMB. Write for information. Albert Knack, Geneseo, Illinois.

HONEY AND BEESWAX WANTED

WANTED—Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—White and Light Amber Honey. Carlots or less. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

WANTED—White and light amber extracted honey. Also comb. Prairie View Apiaries, 2005 Fullerton, Detroit, Mich.

WAX worked into comb foundation, accepted in trade for supplies or bought. Write for our proposition and shipping tags.
Walter T. Kelley Co., Paducah, Kentucky.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth St., Los Angeles, California.

WANTED — White extracted, comb, any amount. Quote best price first letter.
Central Ohio Apiaries, Millersport, Ohio.

FOR SALE

EQUIPMENT FOR 300 COLONIES of bees with building and cabin to live in. In good location. For sale or lease.
J. F. Pithoud, Fromberg, Mont.

FOR SALE—75 Root chaff hives with combs. 150 Root standard metal cover hives. 700 Extracting supers with wired combs. 200 Comb beeway supers with fixtures. Root power extractor, tank and other equipment. Hives paintd, 10-frame, and free from disease. Donald R. Van Ornam, Hardy, Nebr.

100 SUPERS for 4x5 sections. 10-frame size, Root make, well painted, A-1 condition, KD prices. Guaranteed no disease.
E. S. Miller, Valparaiso, Indiana.

FOR SALE—100 to 500 colonies and locations, account age.
Honey Park, Cortez, Colorado.

TRADE

FOR SALE OR TRADE—My six room house, lot, garage and honey house in Thief River Falls, Minn. C. McReynolds, 514 Dewey Ave., Thief River Falls, Minn.

FOR TRADE—International two-ton truck, '35 model, for bees. Prefer bees in South.
Walter Orange, Ruthton, Minn.

WILL TRADE 160 ACRES valley land, Oregon, for bees.
Box Bees, American Bee Journal.

WANTED

WORK FOR COMING SEASON, extracted or comb. Experienced. Robt. Hassard, 401 5th, Seattle, Washington.

WANTED—Experienced help. State qualifications and wages wanted.
Schultz Honey Farms, Ripon, Wisconsin.

WANTED—Queen breeder for coming season. State experience.
H. C. Short, Fitzpatrick, Alabama.

SUPPLIES

YOUR WAX WORKED into quality medium brood foundation for 15c per pound, 100 pounds $14.00. Fred Peterson, Alden, Iowa.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices.
Hamilton Bee Supply Co., Almont, Mich.

SAVE QUEENS. Safin cages now 15c. Ten for $1.00.
Allen Latham, Norwichtown, Connecticut.

BEST QUALITY soft white pine Hoffman frames $30.00 per thousand. Complete line of bee supplies manufactured by us. All prices the lowest. Free catalog.
The Walter Kelley Co., Paducah, Ky.

QUALITY BEE SUPPLIES. Prompt shipment. Reasonable prices. We take honey and beeswax in trade.
The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates.
E. S. Robinson, Mayville, N. Y.

DAIRY GOATS

DAIRY GOAT JOURNAL, Dept. 701, Fairbury, Nebr. 50c yearly; 3 months 10c.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, The Way's End, Foxton, Royston, Herts, England.

PLANS FOR POULTRY HOUSES — All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c.
Inland Poultry Journal, Spencer, Indiana.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

New Givaudan Product

Givaudan Delawanna Inc., New York, announces a new fragrance borrowed from the honeycomb, Aromel, offering, as they say, "many new possibilities for scenting perfumes, soaps, extracts, waxes, polishes, candles, etc., with the fresh, sweet odor of honey."

An interesting development. We do not know the raw material from which the new fragrance is produced, but it does smell very much like orange blossom honey and is exceedingly powerful.

San Antonio Conference Report

(Continued from page 29)

Iowa, Missouri, Oregon, Texas, Florida, Louisiana, Montana, South Dakota, Illinois, Michigan, Nebraska, Wyoming, Indiana, Minnesota, North Dakota, Wisconsin.

Any lady wishing to be in the Ladies Auxiliary Directory will please send 25 cents to Mrs. Florence Bennett, Birkenfeld, Oregon.

Third National Honey Cookery Contest.

Twenty-two states were represented in the third National Honey Cookery contest with a total of 268 entries. The leading states were Wisconsin, 30 entries; Illinois, 27; California, 19; Michigan, 15; and Texas, 14.

The prize winners: Class A. Honey Fruit and Nut Bread. First, Mrs. Ben J. Raybould, Brazil, Indiana. Second, Mrs. A. A. Doenges, Defiance, Ohio.

Other winners in order: Mrs. Miller, Indiana; Mrs. Bodenschatz, Illinois; Mrs. Gill, Illinois; Mrs. Becker, Michigan; Mrs. Fite, Texas; Mrs. Chafin, Wisconsin; Mrs. Gates, Nebraska.

Class B. Honey Fruit Butters. First, Mrs. Geo. Stowell, Barron, Wisconsin. Second, Mrs. Clarence A. Walter, Canton, Ohio.

Other winners in order: Mrs. Haak, California; Mrs. Bennett, Oregon; Mrs. Raybould, Indiana; Mrs. Gill, Illinois; Mrs. Bodenschatz, Illinois.

Class C. Honey Fruit and Nut Candies. First, Mrs. Ila McEwan, Colton, California. Second, Mrs. G. N. Polhemus, Ames, Iowa.

Other winners in order: Mrs. Gates, Nebraska; Mrs. Gill, Illinois; Mrs. Ervan, Michigan; Mrs. Sandau, Texas; Mrs. Hartl, Texas; Mrs. Rauchfuss, Wyoming; Mrs. Miller, Indiana; Mrs. Merrell, New York.

The products were of better quality than entered in the previous contests. Items wrapped in waxed paper were damaged by ants. Those in cellophane were not. Packing was better generally than in previous exhibits.

Most of the baked goods had been properly aged indicating that homemakers making entries had studied and experimented with the use of honey before entering the contest.

—ABJ—

Tampa Continental Can Factory

The Continental Can Company has purchased a forty-five acre plot in Tampa, Florida, as a site for a new manufacturing plant to be equipped to make packers' cans. The total floor area will approximate 70,000 square feet at an estimated cost of $500,000.

Happy New Year

Office Staff of American Honey Institute reading left to right: Front row; Mercedes Cranston, Geneva Wolf. Back row; Willah Goodman, Mrs. Jensen.

Let Us Help Make 1937 a More Prosperous One

We are YOUR Servants.
You are OUR Bosses.

Are you acquainted with your own organization? If not, now is the time to get in touch with it. What would you like to know?

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MADISON ❖ ❖ ❖ ❖ WISCONSIN

Appearance Sells Comb Honey

Its Quality and Flavor Bring Repeat Orders

DADANT'S SURPLUS FOUNDATION

Is Pure Beeswax; Made to Become Part of Comb

Each sheet is dainty and clear, with a delightful fragrance. It is truly a fitting base upon which to build that most splendid product of the hive—section comb honey.

Write for Name of Nearest Dealer

DADANT & SONS, HAMILTON, ILLINOIS

Manufacturers of Wired, Plain and Surplus Foundations

St. Romain's "Honey Girl"

ITALIAN

Package Bees and Queens

AT CODE PRICES

St. Romain's "Honey Girl" Apiaries
Hamburg, Louisiana

LOWER PRICES

IN THE WINTER MONTHS ON WOODEN BEE SUPPLIES.

SEND IN A LIST OF WHAT YOU NEED AND WE WILL QUOTE.

S. P. HODGSON & SONS
NEW WESTMINSTER
BRITISH COLUMBIA

PACKAGE BEES

WE ARE SHIPPING PACKAGE BEES AGAIN THIS YEAR.

FULL WEIGHT

YOUNG BEES

THREE-BAND ITALIANS

1600 COLONIES

ROBT. N. MOORE
R. 2, BOX 128 TEMPE, ARIZONA

NOW IS THE TIME TO BOOK YOUR ORDER

Italians 2 lb. Pkg. & Queen, $2.45 / 3 lb. Pkg. & Queen, $3.15 *Caucasians*

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Shows the way to success . . gives the latest news and views of the rabbit world — an illustrated monthly magazine of general and educational features. Yearly $1.00. Three years, $2.00. Sample 15c.

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PUBLISHED BY

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Bright Italian Bees & Queens

Write us for special prices on your 1937 needs. Queens, Packages and Nuclei.

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REMEMBER NEXT SPRING
REQUEEN and REPACKAGE EARLY
for less supersedure
for less swarming
for strong colonies
In 1937, Merrill Quality Queens and Packages will suit you.
Twenty-six years' experience.
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HONEY
ALL GRADES
COMB AND EXTRACTED
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Three-Band Italian
Bees & Queens
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Subscription 5 shillings per year, start any time. Send International money order. Write now to The Editor, P. O. Box 20, West Maitland, New South Wales, Australia.

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Write for circular describing our oversize packages. Trade packages for wax or foundation. Three-band leather colored stock Italians.
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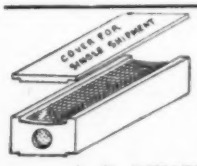

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LOWER AUSTRIAN QUEENS

We give you the things that count: Good queens, full weight of young bees, and prompt shipment.

Standard light weight cages used. Tested three-band Italian stock.

One customer in Illinois produced 150 lbs. surplus from our two-pound packages in a poor season in 1936. What would they do in a good year?

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Two-Pound Package with Queen	2.45
Three-Pound Package with Queen	3.15

Send for circular. Discount to certified dealers.

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We guarantee to refund your money if you are not satisfied. The price, postpaid, is $1.25.

AMERICAN BEE JOURNAL, Hamilton, Illinois

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NON-SAG, TRUE BASE ANGLE **FOUNDATION**
"STOOD THE TEST THROUGH THE HEAT, WITH EVERY MAKE CAN'T BE BEAT."
In our 1800 colonies and hundreds of other's colonies both North and South, no melting down.
IF YOU USE IT YOU WILL LIKE IT. OTHERS DO.
Now that you have your new crop of wax, let us render your cappings or combs into wax. We will make your foundation, or buy your wax for cash.
To those interested in foundation making machinery, we solicit your inquiry. We have the best equipped machine shop and experienced men in this business. Complete plant set up, or individual machines to order. Reference Dun and Bradstreet.
Highland Apiaries and Factory **West Elkton, Ohio**

"EAT HONEY" STICKERS
To paste on your letters, envelopes and packages. A constant honey advertisement. White letters on ½"x2" red paper—"Eat Honey"—Gummed for use.
1000, 40c. 100, 20c. Postpaid.
AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

The Postscript

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

In 1884 J. L. Budd, then head of the Department of Horticulture in Iowa State College, recommended the Russian basswood for planting in this country. He stated that "over the great east plain of Europe it is a general favorite as a lawn, street, park and forest tree. It furnishes material for the whitest and purest honey known to commerce." Budd was offering it as an ornamental to horticulturists. Had he called it to the attention of the beemen perhaps it might have been given more attention.

—ABJ—

This Russian basswood which he called **Tilia parvifolia** was described as able to resist the hottest and driest winds known to interior climates. Since our native basswood is not particularly drought resistant, interest in the Russian species may be revived for the dry Mid-west. Much was said of its value as a source of honey and large profits were credited to the beekeepers in the vicinity of the linden forests in central Russia.

—ABJ—

Interest among the farmers in Lespedeza as a forage crop may be expected to grow. There is little to offer encouragement for the beekeeper in the cultivation of this crop. A. J. Pieters, agronomist of the U. S. Department of Agriculture, explains why it can never be of value in the North even though a strain could be found which is a good source of nectar. He says: "All the Lespedezas are what we call short day plants, that is, they will not bloom in sections where the summer day is long. We have tried Lespedeza sericea in Oregon and find that while this plant will grow it does not b om so far north."

—ABJ—

Edgar Abernathy, of Stanley, North Carolina, reports that with him the bees work on Korean Lespedeza but do not visit the Kobe. The flow lasts for about two weeks in late August and September but the blossoms yield for only about half the day.

He reports that its greatest value lies in the fact that it comes when otherwise there would be a time of scarcity for the bees. While the honey is good when unmixed with bitterweed, the yields are never large, about twenty pounds being as much as he has harvested from the best colonies.

—ABJ—

Some months ago Asberry Singleton, of Gladstone, Manitoba, wrote concerning the leafy spurge saying that the small yellow bloom literally covers the plant and that the bees are very fond of it. The plant is **Euphorbia esula** and fortunately, as yet. has a very limited distribution in the United States. It is a bad weed which can be eradicated with great difficulty.

—ABJ—

Some of the worst weeds are attractive to the bees. Canada thistle which is extremely hard to eradicate is the source of honey of a very good quality. The leafy spurge is a deep rooted plant and once firmly established is likely to remain to plague the farmers for all time to come. It is to be hoped that it can be exterminated before it gets widely distributed.

Beekeepers are always on the watch for new plants which are good for the bees and at the same time useful for other purposes. Beemen have been largely responsible for the wide dissemination of both alsike clover and sweet clover, to the mutual interest of farmers and honey producers.

—ABJ—

The Hon. Lloyd George, former prime minister of Great Britain, appears to be an enthusiastic beekeeper and some of his published speeches contain striking comparisons between human problems and those of the beehive. Of honey he says: "Honey is an appetizing, nourishing, warming and healing food. It is the natural sweet. It contains the vitality that comes from kindling and energizing rays of the sun."

Has anyone ever heard a better description?

Mrs. Minnie King was the first stenographer in the Dadant office joining the force in 1911. Prior to that time members of the family had handled all the correspondence. Although Mrs. King has recently joined the group of grandparents among the staff members she is still very much on the job although there are eight other "girls" to assist her with the office work now.

—ABJ—

Everett George, of Salem, Oregon, sends a clipping from a science magazine which states that the poison of a bee sting is the same in effect as that of a rattlesnake the difference being one of quantity. This raises the question as to whether one who is immune to the effects of bee stings would be able to survive the bite of a rattlesnake. Do any of our readers know of a case of a beekeeper who was bitten by a rattler and if so with what result?

—ABJ—

Nearly fifty years ago when addressing an audience of fruit growers, Eugene Secor said, "Bees are the love messengers which carry on the courtship and hasten the marriage of blushing blossoms." In that day many fruit growers were hostile toward the bees, little realizing their value in the pollination of plants.

—ABJ—

An occasional inquiry comes to me as to whether honey is good for this or that medicinal use. Frankly I don't know much about it but in most cases I am very doubtful. In the old days honey was a common ingredient in many remedies and probably helped to make them pleasant to take. Since nature has strong recuperative powers it is common to credit results to remedies which were in no way responsible.

Honey seems to be retained in several remedies for coughs; whether for its pleasant taste or for its soothing qualities it is still popular.

—ABJ—

Ben M. Knudson, of LaJara Colorado, offers a sticker. He wants to know what factors control nectar secretion and what one must observe in order to anticipate when honeyflows will start, how long they will last and whether they will be heavy or light, steady or intermittent.

I wish that I were able to answer that one. For twenty years I have been studying this problem and in that time have made but little progress. We know that temperature, moisture, wind, soil and sunshine all have an influence. Just what combination of factors insure a good flow and what a poor one we can only guess.

—ABJ—

In my opinion Mr. Knudson presents the greatest problem which the beekeeper must face and the one which has attracted the least attention on the part of investigators. When we understand clearly these things we can save ourselves many useless efforts and insure prosperity by taking our bees to the place where a crop is assured.

—ABJ—

C. W. Wood, of Copemish, Michigan, who is making a serious study of honey plants along with other horticultural investigations, writes that Salvia sclarea turkestanica is about the only salvia which produced any nectar in his part of Michigan this summer. That stood up under field culture without any loss. He has a number of salvias under test for blossoming next year. Some of our finest honey plants belong in that group.

—ABJ—

Paul Jones, of Portsmouth, Ohio, suggests that fried chicken is a big help to any meeting. He also says that because of his bees there are a number of extra fine folks who he has met that he might not have known otherwise. Fine folks and fried chicken is the regular thing at the bee meetings.

FRANK C. PELLETT